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## A STUDY OF THE BUPRESTIDÆ, COLLECTED BY CHARLES FULLER BAKER IN SINGAPORE, BORNEO, AND THE PHILIPPINE ISLANDS

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### FOUR PLATES

This paper is based on part of a collection of Buprestidæ, received from Charles Fuller Baker, made during his explorations in some localities of the Philippine Islands, in northern Borneo (Sandakan), and at Singapore.

The paper was nearly completed when I received a copy of an important study by W. S. Fisher.<sup>1</sup> The work of Fisher was also based on the Baker collections and was augmented by some new species, conserved in the collections of the United States National Museum, Washington, D. C. I have found still more new species, not yet described, in the collections sent to me and also in my rather rich collection which contains many of the rare species of the old collections of Meyer-Darcis and others. Most of the Buprestidæ herein mentioned belong to the same genera as those treated by Fisher; namely, *Agrilus* and *Trachys*.

Systematic studies in Buprestidæ are daily becoming more complicated and more difficult. Buprestid beetles are generally rare; their conditions of life are sometimes very specialized,

<sup>1</sup> New Coleoptera from the Philippine Islands, family Buprestidæ, tribe Agrilini, Philip. Journ. Sci. 18 (1921) 369 to 447.

and the number of specimens of most species in collections is small. The types are conserved in many private and public collections and are generally accessible to specialists only under great difficulties. Therefore, it is necessary to work on the same basis as did the earlier authors and to adopt all their findings, and on these earlier studies synopses must be built. In this connection, it is best to adopt an old and good key and to enlarge it by the addition of newly described forms. In the Oriental fauna there are few such keys for *Agrilus* and *Trachys*, the best ones being by Deyrolle. Generally, the descriptions of Kerremans are very superficial and, unless one can see the types, it is not easy to arrange them in the form of a key.

For the present study I have made keys which include all the species described by Fisher and also all my new species from the Philippines. I have added intentionally all the other species from Sandakan and Singapore, to indicate their natural positions. The agriloid Buprestidæ of the Oriental fauna can be divided into two great zoögeographical groups: the first, continental, comprising East India, Ceylon, Burma, Tonkin, Laos, South China, and southern Japan, excluding the Malay Peninsula; the second, comprising the Oriental islands, insular division, with all the Sunda Islands, Philippines, Formosa, Malay Peninsula, etc. There are numerous passages to the Papuan fauna.

*Trachys* and *Agrilus* are very old genera, and the species from different points of the Philippines, Sunda Islands, or Malay Peninsula are very similar; it is therefore not without reason that I have added them to my keys. I could not possibly follow the key established by Fisher, since most characters used by him are not mentioned in the earlier descriptions. His key is based on some characters adopted by Horn in his Revision of the Agrili of the United States, which has also made the study of North American Agrili superfluously difficult. My maxim in making keys is to make them workable to the greatest number of students; to make them easy, clear, and always where possible to use the characters of the upper surface, since some characters of the undersurface, such as the form of the tip of the prosternal process in Agrili, are rather variable. I have, however, adopted from the keys of Fisher all that seemed to me to be useful.

The descriptions of Fisher are excellent and very valuable; this circumstance has enabled me to work with them and to



introduce them in my keys without seeing the types; I hope that I have placed them correctly. The future specialist who wishes to review all Oriental insular Agrili or *Trachys* species can simply combine my keys with the completed keys of Kerremans and Deyrolle.

To this study I have added figures and sketches of all species mentioned. Types are deposited in the Baker collection when belonging to it; all other types cited here and some of the duplicates of the Baker types are in my own collection. I take this opportunity of thanking Prof. Charles Fuller Baker for having sent me this important material for study and for having given me a copy of the paper by Fisher for my use. I also thank Mr. Fisher for his kind assistance.

#### Genus IRIDOTAENIA H. Deyrolle

A specimen of but one species of this genus was sent to me for determination. The genus contains actually about sixty species, all except two of which inhabit the Oriental Region; the two exceptions are rather different forms, from tropical Africa.

Some species of *Iridotaenia* are characterized by different designs (longitudinal yellow fascia on the elytra) in the males; most of them are very rare in collections.

##### *Iridotaenia sulcata* Fabricius.

One specimen of this species was taken at Sandakan by Baker. It is a little smaller and narrower than my other specimens, from Ceylon, but in all other important characters is identical.

#### Genus SAMBUS H. Deyrolle

##### *Key to the species.*

- a*<sup>1</sup>. Head with vertex distinctly gibbose. Head and pronotum bright red, disk purple, front bright green, pronotum with greenish tinge along lateral margin. Elytra coppery bronze, marked with irregular designs of white and pale yellow pubescence, the transverse zigzag band at apical fourth very distinct; 4 millimeters. (Mindanao.)  
*S. gibbosus* Fisher.
- a*<sup>2</sup>. Head with vertex not distinctly gibbose.
- b*<sup>1</sup>. Surface of elytra tricolored.
- c*<sup>1</sup>. Elytra with a half-oval purple or violaceous spot along lateral margin.
- d*<sup>1</sup>. Head deeply grooved, slightly transversely rugose, clothed with pale yellow pubescence, becoming denser and longer on occiput, brilliant reddish purple. Rather robust, uniformly cupreous,

each elytron with a large, oblong lateral spot of beautiful reddish purple; prothoracic surface strongly punctate and concentrically rugose; 5.25 millimeters. (Luzon and Mindanao.)

*S. bakeri* Fisher.

*d*<sup>2</sup>. Head moderately impressed on vertex, rather strongly transversely rugose, nearly hairless, brilliant green. Cupreous with golden reflections, sides of prothorax greenish, elytral lateral spot violaceous; prothorax surface finely sculptured; 4.5 millimeters. (Sulu Islands.)..... *S. adonis* sp. nov.

*c*<sup>3</sup>. Elytra without lateral spots, with diverse designs on disk.

*d*<sup>3</sup>. Larger; elytra with irregular black and green designs. Head and pronotum brassy green, the former with front bright green. Beneath black, with bronzy tinge, nearly glabrous. Head deeply grooved its entire length. The brassy green elytral areas clothed with white and yellow pubescence; 4 millimeters. (Luzon.)..... *S. parallelus* Fisher.

*d*<sup>4</sup>. Aeneous, elytra with large, transverse, dark aeneous preapical and oval glabrous macula, common to both elytra, and with a small dark apical area on each side. Front brilliant blue. Beneath black, antennae green, upper side of femora bluish; 3 millimeters. (Borneo.)..... *S. sandakanus* sp. nov.

*b*<sup>5</sup>. Surface of elytra unicolored.

*e*<sup>5</sup>. Elytra bronzy or aeneous with green or cupreous tinge.

*d*<sup>5</sup>. Pubescence on elytra uniform, not forming distinct designs, pale yellow. Entirely bright aeneous above; front bright green, occiput bronzy. Beneath bright brassy green, clothed with silvery white pilosity; 4 millimeters. (Luzon.)

*S. confusus* Fisher.

*d*<sup>6</sup>. Pubescence on elytra forming distinct designs, especially on apical part.

*e*<sup>6</sup>. Vertex with a deep impression in the middle. Head and prothorax golden, the latter with the sides widely depressed. Elytra bronzy, densely golden pubescent, two spots on suture above middle, a transverse band below the middle, two spots or an interrupted band between this and the apex itself, naked; 2½ lines (ex E. Sd.). (Samar.).

*S. auricolor* E. Saunders.

*e*<sup>7</sup>. Vertex convex, with only feebly indicated median impression.

*f*<sup>7</sup>. Smaller. Thoracic carina distinct. Antennae green (male) or bronzy (female). Disk of prothorax with a rather deep depression on the inside of lateral carina. Head and pronotum brilliant green (male) or coppery (female), elytra bronzy and marked with irregular patches of white and pale yellow hairs; 4.5 millimeters. (Mindanao.)

*S. ornatus* Fisher.

*f*<sup>8</sup>. Larger. Thoracic carina very indistinct. Antennae black with blue tinge. Disk of prothorax without distinct lateral depressions. Olivaceous, head cupreous, prothorax golden. Elytra with pubescent designs formed of yellow pilosity only; 5.3 millimeters. (Philippines.)

*S. philippinarum* sp. nov.



c<sup>1</sup>. Elytra dark, blue or black.

d<sup>1</sup>. Elytra blue. Robust; entirely blue above, elytra marked with transverse bands of silvery white pubescence. Head rather deeply grooved; 7 millimeters. (Mindanao.)

*S. fasciatus* Fisher.

d<sup>2</sup>. Elytra dark violaceous or black, without blue reflections.

e<sup>1</sup>. Elytra shining, with six (3 + 3) large spots on disk and with a short, humeral, elongate white spot formed of silvery white, silky pubescence. Head green, vertex black. Prothorax black with greenish sides, elytra black; 3.5 millimeters. (Basilan.)

*S. delicatulus* sp. nov.

e<sup>2</sup>. Elytra without isolated spots, elytral designs being formed of more or less distinct transverse flexuous and sinuate fasciæ.

f<sup>1</sup>. Pronotum and elytra of the same color.

g<sup>1</sup>. Pubescence on elytra forming a transverse row of four ring-shaped spots at apical fourth. Short, head bright cupreous, pronotum black, with violaceous reflection. Elytra black, basal half irregularly marked with white pubescence at apical fourth; 3.25 millimeters. (Luzon.)

*S. luzonicus* Fisher.

g<sup>2</sup>. Pubescence on elytra forming a zigzag transverse band at apical third.

h<sup>1</sup>. Pubescence on elytra silky white, without intermixed yellow hairs. Behind the transverse band at apical third of elytra with another solid transverse band.

i<sup>1</sup>. Head deeply grooved on vertex and occiput. Entirely black, the white pilosity of elytra forming designs as follows: On basal half an irregular longitudinal band on median part and another along suture, there somewhat broken up and connected at basal fourth, a transverse zigzag band at apical fourth connected along suture and lateral margin to a straight transverse band at apical fifth; 5 millimeters. (Luzon.)

*S. nigricans* Fisher.

i<sup>2</sup>. Head very feebly grooved on vertex and occiput. Entirely black, with slight violaceous reflections, the white designs of elytra similar to those in *S. lugubris* E. Sd.; 4.5 millimeters. (Basilan.)

*S. parisii* H. Deyrolle.

k<sup>1</sup>. Pubescence on elytra golden. White ornamentation on elytra less distinct, not forming a solid transverse apical band behind preapical zigzag band. Black, feebly shining, with feeble æneous reflections; entire surface covered with very fine, short, brownish golden pubescence. White ornamentation small and quite inconspicuous; 4 millimeters. (Borneo.)

*S. bakerianus* sp. nov.

f<sup>2</sup>. Pronotum coppery or æneous; elytra black or violaceous.

g<sup>2</sup>. Pubescence above consisting of white hairs. Rather robust, head and pronotum bright coppery bronze.

Elytra black and marked with transverse zigzag band. Head broadly grooved, the groove becoming deeper on vertex and occiput; 4 millimeters. (Luzon.)

*S. aeneicollis* Fisher.

*g*<sup>1</sup>. Pubescence above consisting of yellow hairs or of yellow and white hairs intermixed.

*h*<sup>1</sup>. Vertex with deep median impression, biconvex. The greatest width of prothorax behind the middle. Sides of front feebly but distinctly sinuate. Head and prothorax cupreous, elytra dark; 4.4 millimeters. (Luzon.)..... *S. maquilingi* sp. nov.

*h*<sup>2</sup>. Vertex with slight median impression, convex. Greatest width of prothorax in or near the middle. Sides of front parallel.

*i*<sup>1</sup>. Larger, more robust. Head and prothorax cupreous; front wider. Transverse elytral fasciæ more flexuous. Greater width of prothorax a little behind the middle; 4 to 4.5 millimeters. (Mindanao and Luzon.)..... *S. lugubris* E. Saunders.

*i*<sup>2</sup>. Smaller, slender. Head bluish green, vertex and prothorax æneous, a little darker in the middle. Front narrower. Transverse elytral fasciæ less flexuous. Greatest width of prothorax in the middle, the latter with more flattened sides laterally; 3.4 millimeters. (Philippines.)..... *S. faustinus* sp. nov.

This rather homogeneous genus is represented in the palaearctic fauna by three species, in the oriental by fifty-six, in the Papuan by two, in Polynesia by two, and in the African by six known species. The species are rather difficult to determine, because they offer few sculptural characters, and the designs of the elytra and the coloring of the body are rather variable.

*Sambus adonis* sp. nov. Plate 1, fig. 22.

Capite ac thorace cupreo aurato, fronte splendide smaragdinea, thoracis lateribus leviter viridescens. Elytris cupreis, luteo-griseo pubescentibus, solum macula longa semiovali laterali, sicut apud *S. dives* H. Deyrolle formata glabra ac purpureo-violacea. Capite lato, oculis lateraliter leviter prominulis, fronte subparallela, latitudine paulo longiori, transverse rugosa, leviter, sparse luteogriseo pilosa. Vertice medio satis fortiter impresso. Thorace longitudine  $2\frac{1}{4}$  latiori, medio convexo, ante basim transverse leviter late impresso, latitudinem maximam in medio longitudinis attingente, lateribus satis leviter rotundatis; carina laterali fere recta, haud forti. Superficie thoraci nitida, satis sparse strigoso-rugosa ac similiter quam caput pilosa. Elytris dense, minute granulosis,



haud nitidis, pube aequali ac densa ornatis, forma speciei *S. dives* similibus. Corpore subtus aeneo, satis nitido, pedibus auratis ac nitidis.

Patria: Sulu Islands (coll. Obenberger). Long. 4.5 mm.

This species is very similar to *S. dives* E. Saunders and also to *S. pertoldi* from eastern India (Bombay), and can be distinguished from the former as follows: The color is more brilliant; the underface in *dives* is entirely black. The purplish lateral maculae are narrower than in *dives* and the sutural hairy space between them is distinctly wider. Prothorax in *dives* is a little longer, having the greatest width behind the middle. Head of *adonis* is wider than in *dives*, with more prominent eyes. Body generally more robust. Color of legs entirely different, being dark aeneous in *dives* and splendidly golden in *adonis*. Head and prothorax bright coppery golden, covered with a fine yellowish gray pilosity; front bright green, transversely rugose. Prothorax nearly 2.25 times wider than long, the greatest width in the middle, with gently rounded sides, fine, straight, lateral carina, entirely covered with sparse, fine pilosity, shining, surface with fine striation. Elytra similar to *dives*; namely, they are entirely covered with fine, dense pilosity; only laterally is there an elongate, half-oval, hairless, purplish violet vitta; other parts of elytra cupreous. The vitta is well defined and like the other surfaces finely, densely granulate, feebly shining. Below brassy, legs golden.

This is a representative of a separate and well-defined group in the genus *Sambus*. In my collection there is a single specimen of this beautiful species, from the old collection of Meyer-Darcis.

*Sambus pertoldi*, recently described from Bombay, is a similar species, but there the lateral maculae are very indistinct and the size, pilosity, and form of head and prothorax are very different.

*Sambus sandakanus* sp. nov. Plate 1, fig. 18.

Olivaceo viridis, nitidus, thorace medio ac elytrorum disco leviter obscuratis; luteo pilosus. Capite lato, oculis lateraliter prominulis, fronte modice convexa, in medio transversim superbe cyaneo plagosa, transverse rugosa, longitudine paullo latiori, sparse aureopilosa. Thorace longitudine fere  $2\frac{1}{2}$  latiore, lato, lateribus rotundatis, carina basali recta, disco subconvexo, ante basim transverse fortiter impresso, nitido, sparse, subtiliter transverse rugoso, sparsim ac tenuiter aureo piloso. Elytris

latitudine fere  $2\frac{1}{3}$  longioribus, lateribus usque ad tertiam partem apicalem subparallelis, dein ad apicem rotundatim attenuatis ac apicibus transverse subobtusae conjunctim rotundatis. Elytris satis dense granulosis, lateribus antice transverse rugosulis, macula minori postscutellari suturali, macula magna communi transversa postmediana ovali, maculaque minori praeapicali laterali paulo obscuratis ac nitidioribus, glabris, pilorum fasciis luteis postice ac antice cinctis. Fascia curta suturali postscutellari communi. Corpore subtus pedibusque griseis, nitidis, obscuris. Segmento abdominali primo medio leviter sulcato, segmento anali apice late sinuato; abdomine fere glabro, laevi.

Patria: Borneo, Sandakan (*Baker*). Long. 3 mm.

This species is remarkable by its color and the disposition of the elytral fasciae. Olivaceous, shining, the middle of prothorax and the less densely granulate, hairless spaces or maculae on elytra indistinct. Head rather broad, with laterally rather prominent eyes; middle of front adorned with a superb blue, transverse macula; front transversely rugose and equally finely covered with golden hairs. Thorax nearly 2.5 times as wide as long, with a long, strong, straight basal carina, with a strong transverse depression before base, this very fine laterally, sparsely rugose, rather shining, covered with equal, fine, sparse golden pubescence. Elytra rather short and rather depressed, with parallel sides to apical third, then finely, moderately rounded and attenuate to tip, where they are subobtusae and transversely, commonly rounded. Surface covered with yellow pilosity, not equally disposed, encircling in the form of denser fasciae the hairless, obscure spaces, which are: First, behind base, small and near suture; second, common to both elytra behind the middle, large oval and transverse; third, before apices, placed laterally and small. Undersurface gray, with feeble olivaceous luster, shining, first abdominal segment in the middle with a longitudinal impression; last ventral segment broadly sinuate at tip.

*Sambus philippinarum* sp. nov. Plate 1, fig. 24.

Olivaceus, satis nitidus, satis robustus. Capite cupreo, convexo, fronte convexa, longitudine paullo latiore, vertice in medio haud impresso. Oculis lateraliter paullo prominulis. Antennis cyanescentibus. Thorace longitudine fere  $2\frac{1}{3}$  latiori, ante basim transverse late impresso, lateribus paulo depressis, carina laterali fere indistincta, latitudinem maximam paullo postmedium



attingente, lateribus rotundatis; colore aureo, satis nitido, superficie satis dense punctato-rugosa, ac, similiter quam caput, subtiliter luteo griseo pilosa. Elytris forma quam apud *S. lugubris* E. Saunders similiter instructis, sed paulo longioribus, satis nitidis, dense ac minute strigoso granulosis, ornamento fasciarum undulatarum satis latarum ac antice haud regularium luteo grisearum ornatis. Corpore subtus pedibusque aeneis.

Patria: "Philippines" (coll. Obenberger). Long. 5.3 mm.

Olivaceous, rather shining, rather robust, generally of the form of *S. lugubris* E. Saunders, but a little narrower. Head cupreous, convex, without median longitudinal impression, a little wider than long, eyes rather small and only feebly prominent on sides. Antennæ black with bluish tinge. Thorax nearly  $2\frac{1}{2}$  times wider than long, with a wide and feeble basal depression, with more distinct lateral impression on sides, the greatest width a little behind middle. Lateral carina nearly obsolete, sides rather strongly rounded. Thorax golden, surface with a rather dense, fine, punctulate striation, covered with fine, yellowish white pilosity. Elytra of a form similar to that in *S. lugubris*, only a little longer; they are densely and finely strigose-granulose, their surface covered with ornamentation generally resembling that of *lugubris*, but unicolored, formed of yellowish white hairs as on prothorax and anteriorly less distinct. Undersurface and legs brassy.

I have in my collection a single specimen of this species, from Staudinger and A. Bang-Haas, Dresden, but without more precise indication of locality.

*Sambus delicatulus* sp. nov. Plate 1, fig. 21.

Species pulcherrima. Capite smaragdineo, alutaceo, albo sparse piloso. Vertice nigro. Thorace nigro, nitido, fere glabro, lateribus viridimarginatis. Elytris nigris, glabris, utrimque maculis tribus albosericeis ac macula parva subhumerali laterali. Capite lato, oculis lateraliter satis prominulis, fronte ac vertice haud impresso, fronte lateribus parallelis, latitudine  $\frac{1}{3}$  longiore, plano, antennis viridibus. Thorace longitudine fere  $2\frac{1}{2}$  latiore, latitudinem maximam in medio attingente, lateribus satis fortiter rotundatis, carina laterali fere indistincta, ante basim late transverse, haud profunde impresso, superficie fere levi, in medio ante scutellum vitta brevi ac tenui longitudinali basali pilorum albosericeorum, superficie minutissime, sparse strigosa ac punctulata. Elytris latitudine  $2\frac{1}{2}$  longioribus, usque ad dimidium parallelis, dein ad apicem leviter rotundatim atte-

nuatis ac apice conjunctim rotundatis, post humeris lateraliter leviter impressis ac ibi macula parva albosericea ornatis. Maculis tribus elytrorum ut sequitur dispositis: prima rotunda, minori in parte tertia basali ac in latitudinis elytri medio, secunda transversa, subfasciformi in parte tertia apicali, suturam haud attingente, tertia parva obliqua in elytrorum apicibus posita. Corpore subtus nigro, pedibus aureoviridibus.

Patria: Basilan Island (*Baker*). Long. 3.5 mm.

This is one of the most beautiful species of the genus. Head shagreened, without median impression, green, wide, with laterally rather prominent eyes, and with sparse, white, fine, silky pilosity. Vertex black. Thorax black, only the sides greenish, with extremely fine, sparse striation and with very fine punctuation between, shining, nearly hairless, spaces only before scutellum with a short, narrow, longitudinal, basal vitta of silky white hairs; the greatest width in the middle, the sides rather strongly rounded. Elytra black, with three large silky white maculae on each side and with a small lateral similar subhumeral macula. The maculae are placed as follows: The first rounded, rather small, in basal third, in the middle of each elytron; the second in apical third, transverse, fasciform, wide, reaching lateral margin and interrupted on suture; the last oblique and placed on apex. Undersurface black, legs golden green. Elytra finely but not very densely strigose and rather shining.

In this collection were two specimens of this species. I know of no similar form with which to compare it.

*Sambus bakerianus* sp. nov. Plate 1, fig. 19.

Niger, subobscurus, unicolor, convexiusculus. Capite lato, subconvexo, vertice modice simplicique canaliculato. Elytris subconvexis, dorso subdeplanatis, similiter quam caput et prothorax subtilissime dense breviterque aureopubescentibus; pubescentia illa huc et illuc densiore et in figuras aliquot nudiformes, alicubi minus distinctas disposita. Partes quae subglabrae apparent, pubescentia obscura et indistincta tectae sunt. In tertia parte anteriori in regione dorsali prope suturam macula minor, rotundata, punctiformis, in tertia parte apicali undula similis, angulosa,  $\wedge$ -formis positae sunt, his duo maculis e pubescentia subtili et densa, albida, sericea compositis. Sculptura elytrorum subtiliori in disco, ad partem lateroanteriorum subrugosa fortiori et squamulas indistinctas subtransversales efficiente. Subtus obscure aeneus, subnitidus, abdomine densis-



sime ac subtilissime punctato, apice integro. Segmento I<sup>o</sup> abdominali convexo. Scutello carinato.

Patria: Borneo, Sandakan (*Baker*). Long. 9 mm.

This species approaches species of the group of *vermiculatus* Deyrolle.

Black, feebly shining, with a feeble æneous luster on sides. Entire surface covered with a fine, dense, and generally not very distinct sculpture, because the greater part of the rugosities is covered by the very short and fine, brownish golden pubescence, which forms the ornamentation composed of a large sutural line and some quite indistinct transverse and undulate lines; the parts of the elytra that are less distinctly pubescent are covered with a darker, finer pubescence. These two types of pubescence are not distinctly separated from each other; in the first third occurs a small, very distinct, well-separated white point; a similar and narrow, angulate line occurs on hind third of length. Head convex, finely punctured, with a fine impressed line in the middle. Prothorax 2.5 times broader than long, anteriorly evenly cut off, regularly rounded on sides, broader basally than anteriorly, with a straight short carina on hind edges, and a moderate transverse impression before base. Antennæ and legs brassy; antennæ short, with short articles. Undersurface densely and regularly covered with a short, fine, golden pubescence.

I have named this species, of which I know only the type from Sandakan, Borneo, in honor of Charles Fuller Baker, who kindly sent it to me.

*Sambus parisii* H. Deyrolle.

A single specimen of this species, which resembles *S. lugubris* E. Saunders, was taken in Basilan Island (*Baker*).

*Sambus lugubris* E. Saunders.

A species of wide distribution in the Philippine Islands. In this collection there were specimens from Kolambugan and Dapitan, Mindanao. The species is rather variable in size, and in the more or less pronounced elytral fasciæ which vary also in width and color.

*Sambus maquilingi* sp. nov. Plate 1, fig. 20.

Capite thoraceque cupreis, elytris obscuris, corpore subtus nigroviridi, brevissime albopiloso. Capite satis convexo, fronte

viridescens, latitudine paulo longiore, vertice profunde longitudinaliter impresso, oculis lateraliter haud prominulis; fronte aureopilosa. Antennis brevibus, nigris. Thorace latitudinem maximam post medium, prope tertiam partem basalem attingente, lateribus fortiter rotundatis; disco convexo; impressione forti praebasali transversa; carinis lateralibus fortibus ac arcuatis; thoracis superficie satis dense ac minute granuloso rugosa, aureopilosa. Elytris dense ac minute granulosis, obscure nigroviolaceis, parum nitidis, fascia satis indistincta postscutellari, fasciis duobus ante medium approximatis, distinctioribus ac magis flexuosis, dein fasciis duobus praeapicalibus valde flexuosis aureopilis ornatis. Apicibus elytrorum pilis aliquot albidis ornatis. Elytris subconvexis, lateribus usque ad tertiam partem apicalem parallelis, dein ad apicem rotundatim attenuatis ac conjunctim rotundatis. Corpore subtus dense granuloso, pedibus obscuris. Segmento abdominali primo ac ultimo integris.

Patria: Luzon, Mount Maquiling (*Baker*). Long. 4.4 mm.

This species is rather similar to *S. lugubris* E. Saunders but differs from that species by many characters. Vertex less convex, but with deeper median impression; prothorax less wide and with more rotundate sides; elytra less robust, with denser, finer granulation; fasciae of elytra wider and unicolored golden. Head and prothorax cupreous; elytra obscured, nearly black, with very feeble violaceous luster. Head rather convex; front a little longer than wide, vertex deeply longitudinally impressed in the middle. Antennae short and black. Eyes not prominent laterally. Prothorax rather wide, the greatest width behind the middle, nearly at basal third; with deep transverse basal impression. Disk rather convex; the lateral carinae strong, curved, and rather long. Surface of prothorax densely, rather finely rugose, and only very feebly shining, covered with short, sparse golden pilosity, similar to that of head. Elytra similar in form to *lugubris*, densely covered with rather fine granulation, adorned with the following flexuous, transverse fasciae of golden hairs: First, rather indistinct, behind base; second and third, before the middle; and fourth and fifth, behind the middle, the latter more flexuous than the others. Undersurface dark, granulate, rather feebly shining, the first and last abdominal segments without peculiar characters.

A single specimen of this remarkable species is in the Baker collection.



*Sambus faustinus* sp. nov. Plate 1, fig. 23.

Speciei *S. lugubris* E. Saunders simillimus, sed ab eo uti sequitur, valde divergens. Corpore minus robusto, minus lato. Capite minus convexo, fronte minus lata ac paullo longiore, oculis lateraliter minus prominulis. Capite thoraceque aeneo, satis nitido, thorace lateribus multo minus rotundatis, in medio latitudinem maximam attingente. Carina laterali thoracis distinctiore. Elytris minus latis quam apud *S. lugubris*, obscure aeneo-violaceis, ornamentis similiter quam apud *S. lugubris* ornatis; fasciis his partim e luteis, partim ex. albidis pilis compositis. Gulari processa ac segmento anali similiter quam apud *S. lugubris* formatis. Vertice multo minus fortiter impresso; corporis sculptura simili, sed thorace plus piloso ac subtilius strigoso.

Patria: "Philippinas" (coll. Obenberger). Long. 3.4 mm.

This species, represented in my collection by a single specimen, was purchased from Staudinger and Bang-Haas, but without exact indication of locality. It resembles very much *S. lugubris* E. Saunders and is generally similar in size and ornamentation. Less robust, a little more elongate; head less wide, front narrower. Vertex much less strongly impressed in the middle. Eyes less prominent laterally and also a little smaller. Thorax less robust, the greatest width in the middle, and of brassy color. Lateral carina of prothorax more distinct. General sculpture similar, but the surface of thorax more finely strigose and covered with a denser gray pilosity. Elytra longer and narrower than in *lugubris*, of a dark brassy violaceous color, with similar hairy fasciæ as in *lugubris*; fasciæ yellow and white.

#### Genus *MELIBOEUS* H. Deyrolle

The species of this genus are rather numerous in the Palæartic and African faunæ; in the Oriental fauna, on the continent, they are also rather numerous, though still little known; they seem to be rare on the large Oriental islands.

I have found in the Baker collection three new species of this very difficult genus, one of which, already represented in my own collection and designated as new, inhabits Kinabalu.

The genus *Nalanda* Thery perhaps falls into synonymy with the old *Meliboëus*, as the characters of the elytral sculpture are very variable in this genus, in which it is possible to find all

conditions from the pure *Meliboëus* type (*Meliboëus bisetus* Thunberg) to the *Nalanda* type. *Nalanda* was based on a species from Ceylon.

*Meliboëus carbonicolor* sp. nov. Plate 1, fig. 16.

Parvus, nitidus, corpore toto nigro, glabro. Capite subconvexo, subpunctura normali minutissime alutaceo, toto obscure cuprescente, sine linea media frontali. Oculis desuper observatis parvis, lateraliter non prominentibus partem anteriorem thoracis attingentibus. Thorace longitudine  $1\frac{1}{2}$  latiori, nitido, convexo, dense reticulato-punctulato, impressione transversa et obliqua basali ornato. Margine laterali in parte basali modeste subsinuata. Sculptura thoracali e rugis distinctis rotundatis et dense punctatis composita; scutello parvo, triangulari, longitudine paulo latiore. Elytris subconvexis, latitudine  $2\frac{1}{2}$  longioribus, ante medium paulo attenuatis, apicibus rotundatis, parte posteriori superficiei subdepressa, illic sutura elevata. Sculptura e seriis transversalibus punctorum composita; scilicet punctorum partem anteriorum transversaliter cum parte anteriore punctorum vicinorum confluenta et eo rugam hanc characteristicam efficiente, quae apud species copiosas imprimis regionis orientalis descripta est; qua de causa tota coleopterorum superficies transversaliter rugata esse videtur; his "rugis" latioribus.

Patria: Borneo, Sandakan (*Baker*); Kinabalu (coll. *Obenberger*). Long. 3.8–4 mm.

This species is represented by a specimen from Kinabalu in my collection. It is related to *Meliboëus stupidus* Obenberger, *M. substituens* Obenberger, and *M. aeneifrons* H. Deyrolle. It is of the same color, but is less convex; the head surface is without shagreening or microscopical rugosity; the front is rugose and not with simple puncturation. The thorax of Deyrolle's species is more rugose and less convex. In *M. carbonicolor* the basal impression is deeper and larger; the thorax is laterally more conical, larger, and laterally rounded as in *aeneifrons*.

A single specimen from Sandakan, Borneo, occurs in the *Baker* material, and another specimen, from Kinabalu, Borneo, in my own collection.

*Meliboëus pravus* sp. nov. Plate 1, fig. 15.

Parvus, nitidus, corpore glabriusculo; abdomine et partibus corporis inferioribus obscure aeneis, nitidis, fronte viridiaenea,



prothorace nigro, lateribus prothoracis tenue viridiaeneo emarginatis. Coleopteris nigrocoeruleis, nitidis, apice violascentibus. Haec species parva sculptura et forma corporis speciei praecedenti simillima; a specie illa fronte latiore (qui apud speciem praecedentem latior est transversalis oculi singuli latitudinis) apud speciem praesentem haec dimensiones fere aequales sunt discrepat; desuper observata pars ocularum lateralis maior est apud speciem praesentem quam apud *M. carbonicolum* sp. nov.; sculptura thoracis fortiori, sculptum coleopterorum minus densa. Corpore speciei praesentis etiam paulo abbreviato et dilatato.

Patria: Borneo, Sandakan (*Baker*). Long. 3.5 mm.

This species is related to the preceding species. The body is generally similar, but a little more enlarged. The elements of the sculpture of the elytra are similar. The lateral sinuation of the hind margin of prothorax is less developed. The most important difference between the two species is in the form of the front; this is larger than in *M. carbonicolor*, laterally parallel; the eyes are smaller, their breadth (transverse diameter) less than the breadth of the front between the eyes. In the present species the eyes are larger, the transverse diameter of an eye is equal to distance between the eyes (in the middle of front). The front is not parallel-sided, but attenuate, and laterally a little rounded; therefore, the least breadth of the front is behind and not on the epistome.

A single specimen from Sandakan, Borneo (*Baker*).

*Meliboeus dapitanus* sp. nov. Plate 1, fig. 17.

Niger, glaber, nitidus, elytris subviolascentibus. Thorace capiteque obscure roseocupreo. Capite (desuper observato) subconico, oculis perparum visibilibus, fronte ad anticem concave attenuata, lateribus subrotundatis; antice subparallelis, fronte longitudine (ab antennarum cavitatibus usque ad verticem) fere  $1\frac{1}{2}$  longiore, transverse rugosa, glabrata, sine impressione media cavitatibus antennarum approximatis, epistomate ea de re fortiter attenuato. Thorace in medio circiter latitudinem maximam attingente, dein ad basim leviter, antice fortius rotundato-attenuato, in medio leviter subgibboso, depressione transversa praebasali, satis dense ac transverse rugoso, rugis singulis distincte punctatis. Scutello lato ac parvo. Elytris glabratis, antice distinctius rugosis, nitidis, convexis, hume-

ris haud prominulis. Abdomine pedibusque nigris, nitidis, processu prosternali parallelo, segmento anali apice subtruncato.

Patria: Dapitan, Mindanao (*Baker*). Long. 3.5 mm.

This species resembles very much the two other species described here and can be easily distinguished from them by the more conical form of the head, the less-developed eyes, and the pronotum having the greatest width nearly in the middle and being more strongly rounded anteriorly.

Black, rather shining, on the elytra with a slight violaceous luster. Head and prothorax dark coppery color. Head relatively small, front narrow, attenuate, then nearly parallel anteriorly. Thorax subgibbose in the middle, the greatest width nearly in the middle, with a large transverse depression before base, with fine, sharp rugation, the rugæ distinctly punctured. Antennæ short and black. Form and sculpture of elytra as in the other two species described here. Prosternal process parallel-sided; abdomen black and shining; last ventral segment subtruncate at apex.

The species of this group are very difficult to distinguish from one another. The general characters of the group are small size, glabrous elytra, and peculiar rugosity of prothorax and elytra. The rugæ are here covered with regular, short, linear punctures. In my opinion the genus *Nalanda*, described by A. Thery, also forms part of this group of *Meliboëus*. The group has many intermediate forms, grading into the general type of *Meliboëus* as it occurs in southern Africa.

#### Genus *AGRILUS* Stephens

*Agrilus* is the largest genus of the Buprestidæ and one of the most important in that family. It contains to-day about 1,200 described species, but this number probably represents only a small part of the existing species. In my own collection there are at least 400 undescribed new species, from South America, Africa, and the Oriental Region. Most of the species of this genus are of small size, rather elongate, and narrowed.

Head more or less convex; eyes more or less prominent laterally or rounded. Antennæ dentate from fourth or fifth joint; the triangular joints often widened, sometimes very transverse; sometimes the antennæ are sexually dimorphic (*A. laticornis* Illiger or *A. dimorphus* M.). Vertex sometimes more or less deeply longitudinally impressed, sometimes very convex.

The form of the lateral margins of the front or of the eyes is of great systematic importance; some species have the front with parallel sides, but in many forms these margins are sinuate. This character has not been given enough attention. It is, however, rather difficult to found sections on it, because the form of the front is sometimes sexually variable, and also because it has not been described for some of the commonest species; for example, the male of the common North American *Agrilus bilineatus* Randall has the front more narrowed, with sinuate sides, while the female has the front very distinctly wider and shorter anteriorly with nearly parallel sides; in the common European *Agrilus elongatus* Hb. (*tenuis* Rtzb.) the males also have the sides of the front sinuate, but the females are nearly parallel-sided, where the front is wider than in the male. This sexual variation has not, so far as I know, been mentioned in the literature.

Prothoracic characters are very important in *Agrilus*. There is a lateral margin, which is acute and forms a carina (lateral carina or marginal carina); this is rather variable, straight or sinuate. Under this carina there is another, more or less arcuate, long carina (submarginal carina), which joins the lateral carina at or in front of the hind angles. At the hind angles there is a third carina (prehumeral carina), which is called lateral carina by some authors; it is more or less strong, more or less developed, convex or nearly straight, short or elongate, sometimes approaching the marginal carina at middle, and distinct also in anterior part of prothorax. Disk of pronotum convex or more or less uneven; prosternum anteriorly margined by a more or less developed gular lobe, processus gularis, or prosternal lobe; this is rounded or sinuate (emarginate) in front, a very important character, and both modifications can be observed in species from all parts of the world. The form of prosternal process is also sometimes of great importance, but it varies rather strongly in some species, and very often is difficult to observe, because the dead Agrili have the legs folded over it in most cases and they cannot always be reprepared. Sexual dimorphism is here also well marked; in some species the prosternal process in the male is covered with a fine, silky white pilosity, and in the female it is nearly hairless. Scutellum more or less transverse, with a transverse carina, in rare cases without it. Elytra acuminate, bidentate, or rounded apically, some-



times (species of southern America) widely enlarged and spatuliform apically.

The length and width of elytra are constant. Elytra rather flattened above, or convex, sometimes with elevated suture posteriorly. In some cases the space along the suture is rather depressed; in some American and African species this suture is extensively marked with an elongate costa. I know no such species in the Oriental fauna. The elytra are generally somewhat hairy; when seemingly hairless the elytra are in reality covered with a very fine, inconspicuous, nearly invisible, dark blackish pilosity. The elytral pubescence, when mentioned in the descriptions, is always described as pale, white or yellowish, in some cases testaceous or brownish, rarely intermixed. The arrangement of the pilosity is very important in this genus. It varies slightly and can be employed very well in tabular analysis. The following systems of arrangement of pilosity on the elytra of diverse *Agrili* can be distinguished:

1. Pilosity equal. The hairs evenly distributed at equal distances from one another, not condensed along suture. In some Oriental species of this group the pilosity is rather indistinct laterally on the declivate sides.
2. Pilosity equal along suture; indistinct laterally, forming a longitudinal fascia along suture on the unimpressed surface. The space along suture is not sulciform. Here belong some African species of this genus.
3. Pilosity rather equal; in or near apical third interrupted by a hairless, glabrous, sometimes darkened oval or transverse fascia. Sometimes the pilosity of apical part is a little condensed on suture. This group is widely distributed in the Palearctic (*A. graminis* C. G.) and Oriental Regions. It is very rare in South America and in the African fauna. The females of some species have the hairless transverse band rather indistinct, and can be easily mistaken for some representatives of the first group.
4. Surface of elytra pilose, the pilosity condensed along suture in a more or less distinct vitta. There may be some modifications, as follows:
  - a. The vitta very distinct, dense, on sulciform surface.
  - b. The vitta rather inconspicuous, only indicated. The species of this group may in some cases be considered as belonging to the first group.
  - c. The vitta a little sinuate, being posteriorly closer to suture. These three groups have representatives in the Oriental fauna. The third one is known only from Oriental regions.
5. Pilosity disposed on the elytra in diverse designs. There may be such modifications as the following:
  - a. Pilosity combined bicolored or tricolored. Very rare species (*A. harlequin* sp. nov.).

- b. Pilosity unicolored, fasciform, on unicolored surface.
- c. Pilosity unicolored, forming diverse designs, not fasciform, on unicolored surface.
- d. Pilosity unicolored, and forming fasciæ or designs on diversely colored surface.
- 6. Pilosity equal anteriorly and posteriorly; the remaining surface glabrous, sometimes otherwise colored. Here belong some African and Oriental species.
- 7. Pilosity disposed in isolated maculæ. There may be modifications as follows:
  - a. Two spots (white, yellow, or brown) (1 + 1) along suture.
  - b. Four spots (2 + 2) along suture.
  - c. Six spots (3 + 3) along suture.
  - d. Eight spots (4 + 4) along suture.
  - e. More than eight spots (5 + 5, 6 + 6) along suture.
  - f. A great number of little spots (*A. occipitalis* Eschscholtz).
  - g. The spots diversely disposed, not only along suture, in various numbers.

In some cases in apparently hairless species there is an indistinct elongate spot on each side of suture apically. Nearly all combinations mentioned here are known from the Oriental Region. The maculæ, or spots, are always unicolored; it is only in a group from southern Africa (*Agrilus sexguttatus* Herbst, *A. andresi* Obenberger, etc.) that the spots are bicolored, testaceous or white anteriorly, black posteriorly. Elytral sculpture composed of a rather rough squamuliform granulation; in some cases this granulation is very fine and dense (*cyaneoniger* E. Saunders, *marquardti* Obenberger, *lanceyi* Obenberger, *splendidicollis* Fairmaire, *mikado* M., *ataman* Obenberger, *aurister-num* M., *spinipennis* Lewis, etc., all from the Oriental and eastern Palearctic Regions).

In some Oriental species there is developed a straight, more or less long humeral elytral carina. This carina forms a prolongation of the prothoracic prehumeral carina and is systematically very important, and not variable. The abdomen is more or less convex; in some cases the dorsolateral part of the first two abdominal sternites is not covered by the elytra; there is here often a lateral pilose spot or sometimes a depression. Where such depression exists, the cariniform lateral margin of the abdomen is broadly sinuate and furnishes very good characters for systematic study. The tergites of the abdomen (the upper face of the abdomen, covered by the elytra) is in most cases bright blue, golden, or green; the last is in most cases longitudinally carinate in the middle; in some species this carina (regularly covered by

the elytra) is prolonged at the tip in a more or less long process distinctly visible from above between the tips of the elytra. It is a very good systematic character, neglected in most cases by the older authors.

The sides of the abdomen (often also the mesosternum and the metasternum) are sometimes covered with more or less distinct spots or maculæ. The last ventral segment is either rounded or sinuate or emarginate at tip. The emargination is large, sinuate, or short, with acute sides, and is in reality formed in some cases not by the external margin of this segment, but by a very fine premarginal stria. The species with sinuate anal segment occur rather commonly in the Palæarctic and Oriental Regions. Among my 250 African species I know of but one that has the last ventral segment sinuate. All North American and Neotropical species have the anal segment rounded at the tip.

On the first abdominal segment there are often some sexual markings. In a group, represented in Europe and in the Oriental Region, there are two small approximate granulæ in the middle in males, sometimes only one; in a large American group the males are adorned there by a fine longitudinal (sometimes impressed) vitta, composed of a silky white pilosity. The last ventral segment in the male is sometimes impressed in the middle. The feet offer very good characters. The length of the first joint of the posterior tarsi is normally constant, in comparison with the other joints and with the length of the tibia. Also, the mucronation of the hind tibiæ (on the inner apical side) may be important. The hind femora in some cases are enlarged.

A useful character is found in the form of the claws; these are either simply cleft, or cleft in such a manner that the lower portions are turned inward and nearly touch. This character cannot be employed for the making of groups, as was done in Horn's key to North American species, because it is rather variable and offers all stages from one type to the other. It is also one of the most inconvenient and obscure characters and is best avoided in making keys. It can, however, be employed very well to distinguish species.

The form of genitalia of the male was formerly never mentioned in the Buprestidæ, though it is rather important. In the Agrili of the Oriental Region, usually, the parameræ of the penis are diagnostic among the species; in a few cases the ædeagus also offers good markings; it is regularly acuminate, in some cases truncate, and emarginate at tip.



Key to the species of *Agrilus* Stephens.<sup>2</sup>

a<sup>1</sup>. Elytra spinose at tip.

b<sup>1</sup>. Elytra unispinose at tip.<sup>3</sup>

c<sup>1</sup>. Tip of elytron acuminate, spine at middle of apex.

d<sup>1</sup>. Pygidium with projecting carina at tip.

e<sup>1</sup>. Elytra covered with rather equal, fine, pale pilosity, with a dark, hairless, preapical, transverse band.

f<sup>1</sup>. Larger. Prothorax parallel on sides. Elytra dark, bluish, elytral pilosity yellow. Mesosternal pilosity and laterodorsal macula on sides of elytra golden; 7.5 millimeters. (Kinabalu.)..... *A. croceisquamis* sp. nov.

f<sup>2</sup>. Smaller. Prothorax distinctly narrowed to base. Elytra bronzy green, covered with paler pilosity. Mesosternal pilosity and laterodorsal macula at sides of elytra silky white; 5.4 to 6.5 millimeters. (Borneo.)

*A. pictithorax* sp. nov.

e<sup>2</sup>. Elytra with six (3 + 3) pubescent areas. Elongate, parallel; front of head and margin of pronotum green; vertex, pronotum except margin, and elytra black; 6.25 to 8 millimeters. (Luzon and Palawan.)..... *A. sexsignatus* Fisher.

e<sup>3</sup>. Elytra without distinct pubescent areas, covered with short, dark, inconspicuous, recumbent hairs, not concealing the surface sculpture.

f<sup>2</sup>. Uniformly dark green, elytra on suture, behind the middle with a poorly indicated gray macula on each side. Last ventral segment with a small, short, but very distinct incision at tip; 5 millimeters. (Singapore.)

*A. tristinus* sp. nov.

d<sup>2</sup>. Pygidium without projecting carina at tip. Prosternal lobe emarginate, last ventral segment rounded at tip.

e<sup>1</sup>. Front of head cupreous, sides of pronotum and beneath bright æneous with a strong cupreous reflection; occiput, pronotum, legs, disk of pronotum, and base of elytra dull dark green with a slight purplish tinge, the elytra becoming dark violaceous posteriorly and ornamented with two (four) pubescent areas, one at the middle and the other on apical third; 11 millimeters. (Mindanao.)

*A. quadriplagiatus* Fisher.

e<sup>2</sup>. Front of head cupreous; sides of pronotum and beneath golden with cupreous tinge; occiput, pronotum, and elytra dark green, elytra becoming a little darker posteriorly, very densely and finely sculptured, without any ornamentation; 7 millimeters. (Kinabalu, Borneo.)..... *A. spinellifer* sp. nov.

c<sup>2</sup>. Tip of elytron emarginate, spine on outer angle, sometimes with a very minute spine on sutural angle.

<sup>2</sup> The following, rather poorly described species are not included here: *abdominalis* E. Sd., *aequicollis* Eschsch., *atomus* Kerr., *balnearis* Kerr., *fontanus* Kerr., *pilicauda* E. Sd., *rubrifrons* H. Deyr. *semperi* E. Sd., *striaticollis* Kerr., *vilis* E. Sd., *oreophilus* Fisher (= *monticola* Kerr.).

<sup>3</sup> See also *Agrilus xenius* sp. nov.

- d<sup>2</sup>. Claws cleft in such a manner that the lower portion is turned inward or quite touches that of opposite side. Prosternal lobe rounded in front.
- e<sup>1</sup>. Pygidium with projecting carina at tip. Obscure, densely and very finely granulate, dark greenish, with a strong purplish tinge. A small white preapical spot on both sides of suture of elytra. Front purplish; 10 millimeters. (Singapore.)  
*A. purpurifrons* H. Deyrolle.
- e<sup>2</sup>. Pygidium without projecting carina at tip. The sculpture less dense, surface more shining.
- f<sup>1</sup>. Apical tooth of elytra stronger and longer without little teeth on outer side. A post-median and a preapical transverse white fascia (rather indistinct sometimes) on elytra; 8 millimeters, more or less. (Sumatra, Borneo, Java, Celebes, eastern India (?), and Philippines.)
- g<sup>1</sup>. Bright blue..... *A. acutus* Thunberg.
- g<sup>2</sup>. Surface black, underside blue.  
*A. acutus* var. *asphaltipennis* var. nov.
- f<sup>2</sup>. Apical tooth of elytra shorter, with some very fine, small teeth on outer side. Form less robust.
- g<sup>1</sup>. Above bright blue; 8.5 millimeters. (Luzon.)  
*A. piperi* Fisher.
- g<sup>2</sup>. Above green or bronzy green; 6.5 to 7 millimeters. (Luzon.)..... *A. luzonicus* Kerr.
- d<sup>2</sup>. Claws simply cleft, the lower portion not inverted. Disk with an ornamentation consisting of white, very flexuous transverse fasciae on elytra; 8 to 10 millimeters. (New Guinea; Philippines: Mindanao and Palawan.)..... *A. ornatus* H. Deyrolle.
- b<sup>2</sup>. Elytra bispinose at tip.
- c<sup>1</sup>. Pygidium with projecting carina at tip.
- d<sup>2</sup>. Elytra without preapical, hairless, dark transverse band or macula.
- e<sup>1</sup>. Larger. Underside golden green. Prosternal (gular) lobe rounded, with a small granuliform elevation in the middle (male), last ventral segment emarginate at tip. An indistinct white longitudinal apical vitta along suture on each elytron; 9 millimeters. (Borneo.)..... *A. dajakorum* sp. nov.
- e<sup>2</sup>. Smaller. Elytra covered with equal, fine, yellow pubescence. Last ventral segment rounded at tip; 5 to 6.5 millimeters. (Borneo.)..... *A. insularis* H. Deyrolle.
- d<sup>2</sup>. Elytra covered with fine pilosity; behind the middle with a transverse, denuded, sometimes darkened band, or at least with a similar rounded macula at the same place.
- e<sup>2</sup>. With very distinct, dark, wide, transverse, preapical denudate band. Remaining surface of elytra less densely pilose.
- f<sup>2</sup>. Prothorax cupreous. Prosternal lobe and anal segment emarginate. Front (from antennal cavities) 1½ times as long as wide, with parallel sides. Shorter; 5.7 millimeters. (Borneo.)..... *A. albogaster* H. Deyrolle.



- f.* Prothorax æneous or dark, nearly black. Of greater length.  
*g.* Head less convex; front narrower, more sinuate at sides. Prothorax shorter, green or æneous, unicolored, lateral carina straight, prehumeral carina more convex; submarginal carina more convergent toward base and joining lateral carina before base. Gular prosternal lobe distinctly emarginate. Scutellum longer; 6 millimeters. (Philippines.)..... *A. saundersianus* sp. nov.
- g.* Head more convex, front distinctly wider, nearly parallel on sides. Prothorax longer, black, with green lateral margins. Lateral carina a little sinuate, prehumeral carina less convex, submarginal carina joined with lateral carina in basal angles. Gular (prosternal) lobe rounded. Scutellum shorter; 6 millimeters. (Philippines.)  
*A. nigrocinctus* E. Saunders.
- e.* The hairless postmedian space on suture less distinct, of the same color as the remaining surface. Elytral pilosity more equal, denser, and longer. Gular (prosternal) lobe and anal segment emarginate.
- f.* More elongate. The hairless macula smaller. Front much narrower, a little sinuate on sides; prehumeral carina of prothorax longer and stronger. Prothorax longer, with parallel sides. Scutellum larger. Apical spines of elytra stronger and longer; 6 millimeters. (Philippines.)  
*A. inquinatus* E. Saunders.
- f.* Shorter. The hairless macula larger. Front much wider, with nearly parallel sides. Prehumeral carina of prothorax shorter and less elevated. Prothorax shorter with less prominent median lobe on anterior margin, distinctly narrowed to base. Scutellum smaller. Apical spines of elytra shorter and smaller; 5.5 millimeters. (Borneo.)  
*A. simillipictus* sp. nov.
- c.* Pygidium without projecting carina at tip.
- d.* Elytra with pubescent ornamentation. Head and sides of pronotum æneous, becoming purpureous toward apex. Each elytron with an inconspicuous wide band of short pubescence; 7.25 millimeters. (Mindanao and Luzon.)  
*A. subspinosus* Fisher.
- d.* Elytra without distinct pubescent ornamentation, with an equal pilosity or nearly hairless.
- e.* Prothorax and head golden, elytra blue, covered with fine, equal, golden pilosity. Anal segment rounded at tip. Gular lobe rounded anteriorly; 5 millimeters. (Borneo.)  
*A. aureocœrulans* sp. nov.
- e.* Color otherwise.
- f.* Prothoracic carina short, very arcuate, elytral spines unequal, blue. Hind tarsi nearly half as long as tibiæ, first joint about equal in length to the four following joints united; 8 millimeters. (Luzon.)..... *A. banahaoensis* Fisher.

- f.* Prothoracic carina longer, less arcuate.
- g.* Color dark violaceous, with bronzy humeral impressions on elytra. Hind tarsi nearly as long as tibiae, first joint about equal in length to the three following joints united; 5.5 millimeters. (Singapore.)..... *A. falsulus* sp. nov.
- g.* Color bronzy or bronzy green. Surface covered with fine white pubescence.
- h.* Prehumeral carina of prothorax long, nearly straight, extending to lateral margin near middle. Intervals between strigæ of prothorax finely and sparsely punctate. Prosternal lobe acutely and rather deeply emarginate at middle; 6 millimeters. (Luzon.)  
*A. maquilengensis* Fisher.
- h.* Prehumeral carina long, strongly approaching lateral carina (lateral margins). Intervals between strigæ of prothorax without minute punctation. Prosternal lobe rounded; 3.9 millimeters. (Borneo.)  
*A. bidentellus* sp. nov.
- h.* Prehumeral carina rather feeble, long; prothorax rather long, without more distinct punctation between strigæ. Prosternal lobe rather widely emarginate; 3.5 millimeters. (Philippines.)..... *A. intrusus* sp. nov.
- a.* Elytra not spinose at tip, more or less widely rounded, sometimes strongly dentate apically (exception, *A. xeni* sp. nov.).
- b.* Claws cleft in such a manner that the lower portion is turned inward, nearly or quite touching that of opposite side.
- c.* Hind angles of pronotum with distinct prehumeral carina.<sup>4</sup>
- d.* Hind tarsi half as long as tibiae. Form elongate. Anal segment sinuate at tip. Apical third of elytra black and nearly glabrous, with the exception of an elongate sutural white vitta.
- e.* Larger. Front wider and shorter, with more-parallel sides. Eyes not so near together at occiput. Gular lobe distinctly sinuate. First joint of posterior tarsi as long as the two following joints united; 6 millimeters. (Mindanao and Luzon.) ..... *A. kheili* sp. nov.
- e.* Smaller. Front longer and narrower, with more-sinuate sides. Eyes rather near together at occiput. Gular lobe rounded anteriorly. (Sumatra, Borneo, and Philippines.)  
*A. discicollis* H. Deyrolle.
- d.* Hind tarsi not half as long as tibiae. Form shorter, more robust. Apical third of elytra concolorous.
- e.* Intercoxal process elevated along sides. Front of head and beneath æneous; occiput, pronotum, and elytra greenish blue, with a strong violaceous tinge. Elytra sparsely clothed with short inconspicuous hairs, and each elytron with a transverse band of white pubescence at apical third and a similar band at tip; 5 millimeters. (Mindanao.)..... *A. albocinctus* Fisher.

<sup>4</sup> Here should be placed also *Agrilus occipitalis* Eschsch., which I do not know in nature.

- e<sup>2</sup>. Intercoxal process not elevated along sides.
- f<sup>1</sup>. Rather robust, small; of a gray æneous color, the elytra equally clothed with recumbent, fine, white pilosity. Gular lobe rounded anteriorly; anal segment with a small but very distinct, sharp apical incision; 4 millimeters. (Borneo.)..... *A. agrestis* H. Deyrolle.
- f<sup>2</sup>. Rather robust, less convex. Elytra with a preapical transverse band, with an apical macula and with some maculæ on anterior half. Of a bluish green, rather dark color. Gular lobe rounded anteriorly, anal segment rounded at tip; 5.5 to 6 millimeters. (Borneo and Sumatra.)  
*A. graciosus* H. Deyrolle.
- e<sup>3</sup>. Hind angles of pronotum not carinate.
- d<sup>2</sup>. Hind femora much stronger and more robust than the anterior ones, distinctly dilated.
- e<sup>1</sup>. Above, blue to greenish blue. Front without smooth spaces. Elytra without rather indistinct inconspicuous pilosity; only behind in sutural region with a few yellow hairs; 5.5 to 6 millimeters. (Mindanao and Luzon.)  
*A. subpubescens* Fisher.
- e<sup>2</sup>. Head and pronotum green, elytra brown with a strong æneous tinge. Front with two small smooth spaces anteriorly; 4 to 5 millimeters. (Mindanao.)..... *A. zamboangensis* Fisher.
- d<sup>2</sup>. Hind femora not dilated.
- e<sup>1</sup>. Elytra with pubescent spaces.
- f<sup>1</sup>. Pubescence on elytra forming an inconspicuous vitta. Gular lobe rounded anteriorly, anal segment feebly sinuate at tip. Of a cupreous color; head dark green. Undersurface clothed with very short, very dense, white pilosity; 5.75 to 7 millimeters. (Mindanao, Luzon, and Palawan.)  
*A. inconstans* Fisher.
- f<sup>2</sup>. Pubescence on elytra forming spots.
- g<sup>1</sup>. Blue. Tip of elytron broadly rounded and dentate, each elytron with the tip and a round spot near suture at apical third of short white pubescence; 8 millimeters. (Luzon.)..... *A. bakeri* Kerremans.
- e<sup>2</sup>. Elytra without pubescent spaces.
- h<sup>1</sup>. Above, bluish green. Prosternal lobe broadly truncate in front, anal segment broadly rounded at tip; 7 millimeters. (Mindanao and Luzon.) *A. subviridis* Fisher.
- h<sup>2</sup>. Color above cupreous to bronzy (rubbed specimens).  
*A. inconstans* Fisher.
- b<sup>2</sup>. Claws simply cleft.
- c<sup>1</sup>. Hind angles of pronotum not carinate.
- d<sup>2</sup>. Intercoxal process gradually narrowing, tip acute.
- e<sup>1</sup>. Prosternal (gular) lobe arcuately emarginate in front.
- f<sup>1</sup>. Anal segment rounded at tip.
- g<sup>1</sup>. Color above green, shining, darkened along suture and near apex. Without traces of pale pilosity, the male with a single small granule in the middle of first segment; 6 millimeters. (Sulu Islands.)..... *A. viridicolor* sp. nov.



*g*<sup>1</sup>. Elytra with distinct pale, fine, short silky hairs.

*h*<sup>1</sup>. The hairs forming a rather indistinct longitudinal narrow fascia along suture. Green. Male with a sharp tooth at middle of first abdominal segment. Larger; sides of pronotum nearly parallel. Rather shining; 6.75 to 8 millimeters. (Mindanao.)

*A. subvittatus* Fisher.

*h*<sup>2</sup>. The hairs covering rather unequally the entire surface of elytra. Smaller; prothorax finely but roughly granulate, rounded on sides; 6 millimeters. (Sulu Islands.)..... *A. orientis* sp. nov.

*f*<sup>1</sup>. Anal segment sinuate at tip. Elongate, rather narrowed, black; 5.8 millimeters. (Sulu Islands.)

*A. encaustus* sp. nov.

*e*<sup>2</sup>. Prosternal (gular) lobe rounded in front. Anal segment rounded at tip. A distinct golden longitudinal fascia on elytra along suture. Head and pronotum brassy green, elytra green with purplish tinge; 5.25 to 6.8 millimeters. (Luzon and Mindanao.) (*A. fulvovittatus* Fisher.)

*A. fisheri* sp. nov.

*d*<sup>1</sup>. Intercoxal process expanded behind coxæ, tip broad and emarginate. Uniformly olivaceous, the elytra rather densely clothed with short, semierect white hairs which form a wide inconspicuous band along suture; 6.5 millimeters. (Mindanao.)

*A. semipubescent* Fisher.

*c*<sup>2</sup>. Hind angles of pronotum carinate (= prehumeral carina).

*d*<sup>2</sup>. Pygidium with projecting carina at tip. Elongate, color uniformly plumbeous, with a slight purplish green tinge, front cupreous. Elytra rather densely clothed with distinct, short, whitish, recumbent hairs. Prosternal (gular) lobe broadly rounded in front, last ventral segment subtruncate at tip; 5.25 millimeters. (Mindanao.)..... *A. innotatus* Fisher.

*d*<sup>3</sup>. Pygidium without projecting carina.

*e*<sup>3</sup>. Upper surface clothed with combined pilosity, white and brown, with intermixed black hairs. Ornamentation resembling that of some *Sambus* species. Prosternal lobe rounded, last ventral segment subtruncate; 4.5 millimeters. (Kinabalu, Borneo.)..... *A. harlequin* sp. nov.

*e*<sup>3</sup>. The pilosity (when present) unicolorous.

*f*<sup>2</sup>. Elytra without longitudinal carina on humeri, forming the prolongation of the prehumeral carina of prothorax.

*g*<sup>1</sup>. The white, gray, or yellow pilosity of elytra forms diverse distinct ornamentations, maculæ, fasciæ, or spots.

*h*<sup>1</sup>. Last ventral segment rounded at tip.

*i*<sup>1</sup>. Prosternal (gular) lobe rounded. Uniformly cupreous. Elytra with a postscutellar pubescent area; each elytron with a small spot of pale yellowish pubescence near suture and on apical third; 6.5 millimeters. (Palawan.)..... *A. palawanensis* Fisher.

- 7̄. Prosternal (gular) lobe distinctly emarginate. Four (2 + 2) small, elongate, pubescent areas along suture, situated in basal and in apical third.
- j̄. Head wider. Prothorax wider, with more acute hind angles. Elytra apically produced in a short but very acute, denticulate spine. The spots are formed of golden pilosity; 6 to 7.5 millimeters. (Key Island.) ..... *A. xenius* sp. nov.
- j̄. Head narrower. Prothorax less wide, with less acute hind angles. Elytra simply rounded at tip. Elytral spots formed of white pilosity; 6 millimeters. (Borneo.) ..... *A. sandakanus* sp. nov.
- k̄. Last ventral segment emarginate at tip. Prosternal (gular) lobe distinctly emarginate.
- ī. Uniformly cupreous, each elytron with a small spot of pale yellowish pubescence near suture and on apical third. Prehumeral carina of prothorax reaching nearly to apical angles. First joint of hind tarsi fully as long as the four following joints united; 7.5 millimeters. (Mindanao.)  
*A. bisignatus* Fisher.
- ī. Dark violaceous, with cupreous luster, front bright green; on each side of suture a long longitudinal fascia, reaching to middle of elytra, where it is dilated arrowlike (a similar spot on suture in apical fourth); both formed of a silvery, silky white pilosity. Prehumeral carina strong, but shorter. First joint of posterior tarsi as long as the two next joints united; 5 millimeters. (Sulu Island.)  
*A. atratulus* sp. nov.
- ḡ. The white, gray, or yellow elytral pilosity not disposed in distinct ornamentations.
- h̄. The equal pilosity of elytra interrupted near apical third by a transverse, denudate, sometimes darker-colored fascia.
- ī. Prosternal (gular) lobe simply rounded. Last ventral segment truncate at tip. Æneous, head and pronotum violaceous. Elytral pilosity white. First joint of posterior tarsi as long as the three next joints united; 4.5 millimeters. (Borneo.)  
*A. oppositus* sp. nov.
- ī. Prosternal (gular) lobe in front and last ventral segment at tip emarginate.
- j̄. Smaller. Æneous, prothorax brassy green, front bright green; emargination of last ventral segment small but well defined, with sharp acute angles; 3.1 millimeters. (Borneo.)  
*A. microtatus* sp. nov.

*j*<sup>2</sup>. Larger; color otherwise.

*k*<sup>1</sup>. Color olivaceous, bronze, head dull green, each elytron with transverse, denudate, dark band at apical third. First joint of posterior tarsi fully as long as the four following joints united; 5 to 6.25 millimeters. (Mindanao and Luzon.)

*A. philippinensis* Fisher.

*k*<sup>2</sup>. Cupreous, elytra æneous, with darker, denudate, transverse preapical fascia. First joint of posterior tarsi as long as the three following joints united; 5 millimeters. (Kinabalu, Borneo.)

*A. operosus* sp. nov.

*k*<sup>3</sup>. Without transverse preapical denudate or dark bands on elytra.

*i*<sup>1</sup>. Elytral pilosity disposed in more or less distinct longitudinal vitta, denser along suture.<sup>5</sup>

*j*<sup>1</sup>. Prosternal (gular) lobe distinctly emarginate in middle. Head greenish blue, pronotum and base of elytra blue, with a strong violaceous tinge, balance of elytra purplish brown, becoming violaceous toward apex. Elytral pilosity indistinct, forming an inconspicuous elongate vitta along suture. Front with a deep median impression; 11 millimeters. (Luzon.).... *A. aguinaldoi* Fisher.

*j*<sup>2</sup>. Prosternal (gular) lobe broadly rounded, not emarginate. Head and prothorax bright green, elytra darker, obscured toward apex, with a subsinuate yellow longitudinal vitta along suture, only distinct from behind the middle toward apex; 6 millimeters. (Singapore.)

*A. singaporensis* sp. nov.

*i*<sup>2</sup>. Elytral pilosity equal, distinct; in some cases rather indistinct on the declivate sides of elytra or a little condensed along suture.<sup>5</sup>

*j*<sup>1</sup>. Anal segment distinctly emarginate at tip. Prosternal (gular) lobe indistinctly emarginate in front. Short, rather robust, head green, pronotum piceous, with a strong æneous tinge; elytra piceous, with a metallic tinge, covered with semierect whitish pubescence. Tip of intercoxal process wide and biemarginate; 4.7 millimeters. (Mindanao.)..... *A. butuanensis* Fisher.

*j*<sup>2</sup>. Last ventral segment rounded at tip.

*k*<sup>1</sup>. Prosternal (gular) lobe distinctly emarginate at middle.

*l*<sup>1</sup>. First joint of posterior tarsi relatively short, as long as the two following joints united. Elytral pilosity white, very short, indistinct

<sup>5</sup> See *Agrilus tayabensis* Fisher.



- toward sides. Marginal carina of prothorax straight, prehumeral carina convex, reaching marginal carina in front of middle. Front with parallel sides, rather wide, prothorax rather short. *Æneous*; 4.5 millimeters. (Sulu Islands.)..... *A. tardulus* sp. nov.
- P.* First joint of posterior tarsi distinctly longer than the next two joints united.
- m*<sup>1</sup>. Prehumeral carina of prothorax convex, reaching marginal carina at middle.
- n*<sup>1</sup>. First joint of posterior tarsi as long as the three following joints united. *Æneous*, rather shining; elytra covered with distinct and rather dense golden pilosity; 5 millimeters. (Borneo.)
- A. pilipennis* sp. nov.
- n*<sup>2</sup>. First joint of posterior tarsi as long as the four following joints united. Color olivaceous bronzy, with head dark green (male) or cupreous (female). The yellow pilosity forms a broad inconspicuous vitta along suture; 5.2 millimeters. (Luzon.)..... *A. tayabensis* Fisher.
- m*<sup>2</sup>. Prehumeral carina of prothorax convex, but distinctly longer, reaching marginal carina near anterior third or in anterior angles.
- n*<sup>2</sup>. First joint of posterior tarsi as long as the four following joints united. Color olivaceous bronzy, head green (male) or cupreous (female); disk of pronotum slightly purpureous. Elytral pubescence formed of a rather dense, short, semi-erect white pilosity, becoming indistinct along lateral margin. Tip of intercoxal process attenuate. Prehumeral carina of prothorax reaching marginal carina near apical angles; 4.5 millimeters. (Mindanao and Luzon.).. *A. attenuatus* Fisher.
- n*<sup>3</sup>. First joint of posterior tarsi as long or nearly as long as the three following joints united. Prehumeral carina of prothorax a little shorter, reaching marginal carina in or nearly in apical third.
- o*<sup>1</sup>. More robust. Head wider, green, without distinct median impression on vertex. Color cupreo-violaceous. Elytra covered with a very short, fine, very dense, equal white pilosity. Undersurface very densely, shortly, finely pilose; 5.5 millimeters. (Borneo.)
- A. uniformipubis* sp. nov.

o<sup>1</sup>. Slender, narrower. Head much narrower, with distinct median impression in the middle of vertex. Color dark æneous, the elytral pilosity much less dense, yellow, rather indistinct toward sides; 5 millimeters. (Sulu Islands.)

*A. pilistoma* sp. nov.

k<sup>2</sup>. Prosternal (gular) lobe simply rounded, not emarginate. Prehumeral carina of prothorax reaching lateral margin near apical third.

l<sup>2</sup>. First joint of posterior tarsi longer than the four following joints united.

m<sup>1</sup>. Intercoxal process parallel between and behind coxæ. Color piceous, head and legs greenish. Elytra sparsely clothed with rather long recumbent pubescence; 3.3 millimeters. (Mindanao.)

*A. dapitanensis* Fisher.

m<sup>2</sup>. Intercoxal process expanded behind coxæ. Color olivaceous bronzy, head and legs green. Elytra covered with distinct short yellowish pubescence; 4.25 millimeters. (Luzon, Mindanao, and Basilan.)

*A. manilensis* Fisher.

l<sup>1</sup>. First joint of posterior tarsi shorter, distinctly shorter than the four following joints united.

m<sup>1</sup>. First joint of posterior tarsi relatively longer, nearly the length of the three following joints united. Color cupreous æneous. Head less convex, wider. Front narrower, with a stronger median impression on vertex. Prehumeral carina of prothorax stronger and longer. Elytra longer, distinctly pilose; 4.5 millimeters. (Sulu Island.)..... *A. luctuosellus* sp. nov.

m<sup>2</sup>. First joint of posterior tarsi very short, equal in length to the two following joints united. Color dark æneous. Head distinctly more convex, narrower, with distinctly much wider front. Size shorter. Prehumeral carina of prothorax shorter, much more feebly indicated, less convex. Elytra covered with a very short and rather inconspicuous, white pilosity, which is indistinct on sides; 4 millimeters. (Sulu Island.)

*A. ludicator* sp. nov.

f<sup>1</sup>. Elytra behind humeri, with a more or less strong, sharp, straight humeral carina.

g<sup>1</sup>. Elytra with denudate (sometimes darker) preapical transverse band.

*h*<sup>1</sup>. Anal segment rounded at tip. Prehumeral carina of prothorax reaching lateral margin in the middle.

*i*<sup>1</sup>. Transverse, dark, denudate band behind the middle; humeral carina of elytra reaching to basal third. First joint of posterior tarsi as long as the four following joints united. Elongate, slender, head and pronotum brassy green; elytra piceous, with a strong metallic luster, covered with short white hairs; 4 millimeters. (Palawan.)

*A. inermis* Fisher.

*i*<sup>2</sup>. Transverse, dark, denudate band in apical third; humeral carina of elytra reaching to basal two-fifths.

*j*<sup>1</sup>. Larger. Prehumeral carina of prothorax convex, sharp. Front narrower, with more-distinct median impression on vertex. Black, the pilosity of elytra rather indistinct and white, forming a rather indistinct transverse white fascia in front of the denuded preapical fascia; 4 millimeters. (Singapore.)..... *A. carinipennis* sp. nov.

*j*<sup>2</sup>. Smaller. Prehumeral carina much less convex, very near to lateral margin. Front wider, shorter, with rather indistinct impression on vertex. Sides of prothorax greenish, front bluish, elytra nearly black, covered with equal yellow pilosity. First joint of posterior tarsi as long as the two following joints united; 3.2 millimeters. (Singapore.)

*A. persolitarius* sp. nov.

*h*<sup>1</sup>. Last ventral segment distinctly emarginate or sinuate at tip.

*i*<sup>2</sup>. Elytra with basal two-thirds and apical fourth uniformly clothed with white or yellowish pubescence. Prehumeral carina joining lateral margin (= lateral carina) near anterior angles.

*j*<sup>1</sup>. Humeral carina reaching to middle of length of elytron. Head green, pronotum cupreous, with a purplish tinge, elytra brassy green, with a broad transverse purplish band at apical third; 3.25 millimeters. (Palawan.)..... *A. minutus* Fisher.

*j*<sup>2</sup>. Humeral carina reaching to basal third of the length of elytron. Æneous, head green. First joint of posterior tarsi as long as the three following joints united; 3.2 millimeters. (Basilan.)

*A. carinellifer* sp. nov.

*i*<sup>2</sup>. Elytra with apical fourth and transverse band just behind middle, clothed with white pubescence. Cyaneous green, head swollen on vertex, beneath bronzy; 2.5 lines. (Mindanao.).

*A. pulcher* E. Saunders.

*g*<sup>2</sup>. Elytra without denuded, dark preapical band, equally pilose, rarely with a more distinct spot near apex.\*

\* *Agrilus malinaoensis* Fisher.



- h*<sup>1</sup>. Last ventral segment sinuate or more or less sharply emarginate at tip.
- i*<sup>1</sup>. Prosternal (gular) lobe distinctly sinuate or emarginate.
- j*<sup>1</sup>. First joint of posterior tarsi as long as the four following joints united. Prehumeral carina of prothorax longer, extending to lateral margin at apical third. Humeral carina of elytra very short. Rather robust, head green, pronotum piceous, with a strong æneous tinge, elytra piceous, with a metallic tinge; 4.7 millimeters. (Mindanao.)  
*A. butuanensis* Fisher.
- j*<sup>2</sup>. First joint of posterior tarsi as long as the three following joints united. Prehumeral carina of prothorax shorter, extending to lateral margin near the middle. Humeral carina longer, reaching behind basal third of the length of elytron. Elongate, slender, brassy green, shining, covered with white, fine pubescence; 4.7 millimeters. (Sulu Island.)..... *A. pterochlorus* sp. nov.
- i*<sup>2</sup>. Prosternal lobe rounded or subtruncate in front.
- j*<sup>1</sup>. Humeral carina of elytra long, reaching to middle of length of elytron. First joint of posterior tarsi as long as the four following joints united. Rather slender, olivaceous bronzy, varying to cupreo-æneous. Prehumeral carina of prothorax joining lateral margin a little in front of middle. Tip of intercoxal process attenuate, with the angles obtuse; 5.25 millimeters. (Mindanao.)  
*A. davaoensis* Fisher.
- j*<sup>2</sup>. Humeral carina shorter. First joint of posterior tarsi as long as the two following joints united.
- k*<sup>1</sup>. Humeral carina very short. Prehumeral carina of prothorax extending to lateral margin near anterior angles. Tip of intercoxal process wide and biemarginate, with the angles very acute.
- l*<sup>1</sup>. Elytra cupreous, with two indistinct white spots along suture near apex. Size robust; 5.25 millimeters. (Luzon.)  
*A. malinaoensis* Fisher.
- l*<sup>2</sup>. Elytra greenish bronze, form slenderer; 4 millimeters. (Luzon and Mindanao.)  
*A. iliganensis* Fisher.
- k*<sup>1</sup>. Humeral carina of elytra reaching to basal fifth. Prehumeral carina of prothorax shorter, strong, reaching only to middle of length of prothorax and not joining lateral margin anteriorly. Dark æneous, short, feebly shining; 4 to 5.7 millimeters. (Mindanao.) *A. cannulus* sp. nov.

*h*<sup>3</sup>. Last ventral segment rounded or subtruncate at tip.  
*i*<sup>7</sup>. First joint of posterior tarsi as long as the four following joints united. Humeral carina of elytra reaching to basal third. Elytra clothed with short, whitish pubescence.

*j*<sup>1</sup>. Prosternal (gular) lobe rounded. Tip of intercoxal process wide and biemarginate, with the angles very acute. Olivaceous bronzy, sides of front nearly parallel. Prehumeral carina of prothorax close to lateral margin and joining it near the apical angles; 4.3 millimeters. (Luzon.)

*A. immaculatus* Fisher.

*j*<sup>2</sup>. Prosternal lobe distinctly sinuate. Tip of intercoxal process attenuate, with the angles obtuse. Color olivaceous bronzy, varying to cupreo-æneous. Sides of front nearly parallel, slightly arcuately emarginate from vertex to clypeus. Prehumeral carina of prothorax joining lateral margin a little in front of middle; 4 to 4.75 millimeters. (Palawan and Mindanao.)..... *A. mindanaensis* Fisher.

*k*<sup>6</sup>. First joint of posterior tarsi shorter, never so long as the four following joints united.

*j*<sup>3</sup>. Prosternal (gular) lobe distinctly emarginate. First joint of posterior tarsi as long as the three following joints united. Elongate, æneous; elytra covered with fine yellow pubescence; 3.8 to 4.2 millimeters. (Basilan and Mindanao.)

*A. exclusus* sp. nov.

*j*<sup>4</sup>. Prosternal (gular) lobe rounded; first joint of posterior tarsi as long or nearly as long as the two following joints united, distinctly shorter than the three following joints united.

*k*<sup>1</sup>. Humeral carina of elytra very short, reaching only to basal fifth of length of elytron. Elongate, finely sculptured, æneous. Elytra covered with dense, very fine, silky, white pubescence; 4.5 millimeters. (Wellesley, Malay Peninsula.)

*A. perniciosellus* sp. nov.

*k*<sup>2</sup>. Humeral carina longer.

*l*<sup>2</sup>. Humeral carina reaching to basal two-fifths of elytron.

*m*<sup>1</sup>. Front rather wide, feebly but distinctly converging apically. Head more convex, wider. Prothorax wider, moderately rounded on sides. Dark æneous; median part of prothorax obscured. Elytra covered with uniform golden pubescence; 3.2 millimeters. (Singapore.)..... *A. lazar* sp. nov.

*m*<sup>2</sup>. Front a little narrower, with parallel sides. Head less convex, narrower. Prothorax longer, with nearly straight sides. Head greenish, prothorax æneous, in the middle with a coppery tinge; elytra dark æneous, covered with fine white pilosity, which becomes nearly obsolete toward sides; 3.5 millimeters. (Malay Peninsula.)

*A. oneratus* sp. nov.

*l*<sup>2</sup>. Humeral carina shorter, reaching only to basal third of elytron. Sides of eyes nearly parallel.

*m*<sup>1</sup>. Tip of intercoxal process wide and dilated. Head narrower, with eyes not prominent. Frontal rugosity strong, distinct, transverse. Lateral (= marginal) carina of prothorax straight. Dark æneous, head black (male) or greenish blue (female). Elytra covered with fine yellow pilosity; 4.2 to 5 millimeters. (Mindanao.)

*A. optatus* sp. nov.

*m*<sup>2</sup>. Intercoxal process parallel-sided, with acute tip. Head wider, more convex, with eyes little prominent laterally. Front shagreened in middle only, without distinct rugæ. Lateral carina of prothorax distinctly sinuate anteriorly. Æneous, rather obscure, covered with grayish pubescence; 4.2 millimeters. (Borneo.)

*A. perniciosus* H. Deyrolle.

*Agrilus croceisquamis* sp. nov. Plate 2, fig. 20; Plate 4, fig. 9.

Elongatus, attenuatus; corpore subtus aeneo, prosterno obscure aeneo, lateribus abdominis plus minusve auratis, capite nigrescente, thorace cyaneo-viridi, obscuro, lateribus tenue clarissime aureo marginatis. Elytris in parte dorsali (sub pubescentia fulva) viridi-aeneis, lateribus plus minusve cyaneiscentibus, obscuris, dimidio apicali cyaneo. Capite in parte praeorali usque ad mediam longitudinem pube dense aurea tecto, parte ulteriori (frontali) glabrata, rugis transversis ac in fronte verticalibus ornata. Fronte largitudine bis longiori lateribus subparallelis, in parte quarta posteriori leviter subsinuatis, hoc loco marginibus frontalibus subimpressis. Oculis normalibus. Thorace longitudinis  $1\frac{1}{4}$  latiore, marginibus rectis, ad angulos basales leviter convergentibus, antice macula e pilis densis aureis composita ornatis. Scutello lato, carinato. Elytris latitudine  $3\frac{1}{2}$  longioribus, lateribus attenuatis et pone medium subsinuatis (parte laterali abdominis segmenti primi,



pilis densis, fulvis ornati desuper visibili) apice unidentatis, subspinosi; duobus spinis angulum suturalem elytrorum efficientibus; margine apicali laterali usque ad dentem apicalem subsinuato. Abdomine dense ac regulariter subtilissime punctato, apice integro. Tergite ultimo supra in medio (sub elytris) longitudinaliter carinato hac carina in processum curtum ac linearem prolongata, qui in angulo amborum elytrorum, quem deus uterque apicalis medius efficit, desuper visibilis est.

Patria: Borneo, Kinabalu (coll. *Obenberger*). Long. 7.5 mm.

This species is very distinct from the other species of the Oriental Region known to me.

Head golden in anterior part, covered with a fine, dense golden pilosity, the other (frontal) half of head black and without distinct pilosity; rugosity of this part transverse, the frontal rugæ perpendicular. Eyes not prominent laterally. Prothorax long, only 1.25 times broader than long, covered with dense, fine rugæ; with a very slight depression before middle and a similar transverse depression before base. Laterally with a distinct depression, which is well marked in the anterior angles, where there is a small but very distinct golden spot of fine, very dense pilosity. Middle part of prothorax dark bluish green, margins pale golden. Prehumeral carina short but very distinct, marginal (lateral) carina subsinuate, and from above distinctly visible; submarginal carina in the anterior angles rather distant from lateral carina; these carinæ converge in the middle and unite in the basal angles. Scutellum transversely carinate and large. Elytra long and attenuate, with a strong median tooth at tip, very finely and roughly sculptured. In anterior half of elytra, along suture, is a large vitta, covered with regular, dense, short, fine golden pubescence; the ground color of this vitta is æneous. A similar but very small spot near suture at apex. Remainder of elytra darker, laterally cyaneous or (apically) distinctly bluish without distinct or (apically) with very short dark pubescence. Legs and antennæ (triangular from fifth joint), greenish. Undersurface more shining and clearer than upper surface. Last abdominal tergite marked with a strong median carina, which is apically prolonged in a linear and short but very distinct process.

An example of this very interesting species, which resembles some species from southern America, was taken at Kinabalu (central Borneo) and is deposited in my collection (ex coll. Meyer-Darcis).

*Agrilus pictithorax* sp. nov. Plate 2, fig. 33; Plate 4, fig. 23.

Elongatus, tenuis, aeneo-virens; vertice thoracisque disco late indigaceis. Elytris longis, unispinosis, pube brevi albida pone medium transverse denudata; partibus elytrorum denudatis obscuratis. Capite subconvexo, vertice sulcato; antennis aeneis, ab articulo quarto vel quinto violaceis, ab articulo quarto (incl.) dentatis. Prothorace longitudine  $1\frac{1}{2}$  latiore, antice valde bisinuato, lateribus ad basim attenuatis, carina praehumerali forti, curvata, carina laterali bisinuatâ, carina submarginali minus recurva, in angulo basali cum illa conjuncta. Scutellum transverse carinatum. Lobo gulari rotundato, in medio paullulo, indistincte subemarginato. Elytris longis, apice unispinosis, hac spinae denticulis aliquot lateralibus. Abdomine convexo, minute dense punctato, segmento primo medio subgranuloso; superficie abdominali regulariter albo pubescente; hac pube in sterni partibus lateralibus densiore. Abdominis segmento ultimo emarginato. Pedibus longis, articulo tarsorum posteriorum primo longitudine quatuor sequentes attingente. Unguiculis dentatis, dentis non convergentibus.

♂♂: Prosterno medio pube densa erecta aurea, abdominis segmento primo granulis duabus approximatis.

Patria: Borneo, Sandakan (*Baker*). Long. 5.4-6.5 mm.

Elongate, cylindric, disk of elytra a little depressed. Head large, rather convex; eyes not prominent laterally. Front green (male) or cupreous (female), long, feebly sinuate on sides, with impressed external margins in the form of narrow channels. Anterior part (perhaps one-third the length) densely and finely transversely strigate, covered with a fine yellow pubescence. Upper part finely shagreened, not striate, with some fine punctures. Vertex distinctly, deeply impressed and finely, longitudinally striate. Antennae aeneous, from fourth or fifth joint violaceous, serrate from fourth joint, long and narrow. Prothorax subcordiform, 1.5 times broader than long, in anterior half parallel, then narrowed to base; anterior margin strongly bisinuate. Prehumeral carina convex, reaching to middle of prothorax, approaching there the lateral carina, sharp and convex; lateral carina strongly bisinuate in anterior part; submarginal carina a little curved, less sinuate than marginal and joining it in the hind angles. With a large transverse depression before base and with a smaller depression in the anterior angles. Vertex and greater part of prothorax dark blue or indigo; only the margins of thorax

golden green. Sculpture consisting of fine curvate concentric striæ. Gular lobe with extremely small emargination. Scutellum transversely carinate. Elytra long; lateral part of first abdominal tergite exposed; greenish olive to three-fifths of length, then obscure; apices æneous, unispinose; green parts covered with fine white pilosity; the obscure band covered with dark short hairs and apparently glabrous. Abdomen convex, last ventral segment emarginate at tip. Claws simply cleft, the lower portion not inverted. Last abdominal tergite with projecting carina.

*Male*.—Head green, middle of prosternum covered with close yellowish hairs. Middle of first ventral segment with two approximate granules.

*Agrilus tristinus* sp. nov. Plate 3, figs. 3, 44.

Obscure cyaneo-viridis, elongatus, convexiusculus. Capite lato, angulos prothoracis anticos latitudine non superante. Fronte longitudinaliter impressa, transverse rugosa ac sparse albido pilosa, lateribus convexis ac paulo rotundatis; vertice impresso; antennis viridibus, curtis, ab articulo quarto (incl.) dentatis. Prothorace longitudine  $1\frac{1}{2}$  latiore, lateribus prope angulos anteriores latissimis, dein ad basim attenuatis; disco thoracis impressione lata transversa praebasali et utrinque depressione minore laterali, rugis transversis antice granuliformibus ac interruptis. Carina praehumerali curta ac valde convexa, carina laterali fere recta, antice paulo declivi, carina submarginali usque ad tertiam partem basalem cum illa subparallela, dein valde convergente ac in angulis basalibus cum ea conjuncta. Lobo gulari emarginato. Scutello latissimo, transverso, carinato. Elytris dense granuloso-rugosis, pone medium subdilatatis, dein ad apicem attenuatis. His curte unispinosis. Pube indistincta obscura; solum pone medium vitta parva suturali ac ante apicem vitta simili minore alba. Pygidium carina curta projecta ornatum. Abdomen convexum, nitidum, dense subtiliter punctatum ac albido pubescens. Tarsis curtis; tarsorum posticorum articulo primo tres sequentes longitudine attingente. Segmento anali emarginato. Unguiculis simpliciter dentatis, dentibus internis non convergentibus.

Patria: Singapore (*Baker*). Long. 5 mm.

I have before me the single specimen of this species found by Baker. In size and color this species somewhat resembles *A. angustulus* Illiger of Europe.



Elongate, cylindric, convex. Head rather convex, front longitudinally impressed, laterally feebly rounded; lateral margins impressed in the form of a small narrow channel. Gular lobe emarginate. Prothorax short and broad, laterally feebly narrowed to base, before base subsinuate, with acute hind angles. Thoracic sculpture dense and fine; the rugæ sometimes interrupted and behind anterior margin granuliform. Scutellum very large and carinate. Elytra not very long, a little enlarged behind middle, then attenuate to apex which is shortly undentate. Apical spine short and situated nearer suture, the two spines forming a small angle on suture, in the middle of which is visible the small and short projecting carina of pygidium. Pilosity of elytra dark on suture behind middle, and shortly before apices two small, white, pubescent spots; other pilosity feebly visible. Abdomen convex, very finely, densely punctate, and covered with a fine, short, white pilosity. Last ventral segment emarginate.

This species is very distinct in consequence of the form of the elytra, short antennæ and tarsi, general form, etc.

*Agrilus spinellifer* sp. nov. Plate 2, fig. 5; Plate 3, fig. 21.

Convexus, cylindricus, corpore subtus aureo, fronte cuprea, vertice, thorace elytrisq̃ue obscure viridibus, elytris ad latera et ad apicem obscuratis. Capite lato, fronte lata, lateribus subparallelis, superficie frontis fere glabra, dense transverse, satis minute strigoso rugoso. Vertice subtiliter longitudinaliter impresso, dense transverse strigoso rugoso. Antennis cupreis, ab articulo quarto dentatis; articulis dentatis albo pilosis. Thorace convexo, transverso, ante basim haud, in angulis anticis leviter impresso, margine antico sinuato; longitudine fere  $1\frac{1}{2}$  latiore, lateribus leviter rotundatis, latitudine maxima in medio; superficie dense transverse strigoso rugoso. Carina praehumerali deficiente, carina laterali (= margine) fere recta, carina submarginali leviter sinuata, antice divergenti. Lobo gulari distincte emarginato. Scutello lato transversim carinato. Elytris convexis, cylindricis, abdomen totaliter tegentibus, pone medium leviter dilatatis, dein ad apicem leviter rotundato-attenuatis ac hic separatim unispinosis. Hac spina apicali forti, tenui, acutissima, mediana. Elytris ambo conclusis angulus parvus suturalis aperit. Sculptura elytrorum minutissima sed granulosissima, densissima, substrigosa aequali; elytris fere glabratis, pube obscura fere invisibili tectis. Abdomine nitido, convexo, minutissime sparse punctato

ac albido pubescente. Pedibus aeneis; tarsorum posticorum articulo primo tres sequentes longitudine adaequante. Unguiculis simpliciter dentatis. Abdominis segmento ultimo apice rotundato, integro.

Patria: Borneo, Kinabalu (coll. *Obenberger*). Long. 7 mm.

Elongate, cylindric, upper surface feebly shining, undersurface more shining. Undersurface golden; upper surface dark green, nearly without luster; front cupreous. Head rather convex, broad, front broad, laterally nearly parallel, with a very distinct but relatively fine, rough sculpture, consisting of transverse rugæ. Vertex feebly impressed, green, transversely densely sculptured. Prothorax convex, without depression before scutellum, the greatest width near the middle, laterally moderately rounded, with fine oblique impression within the anterior angles. Without prehumeral carinæ in the hind angles. Thoracic sculpture relatively fine, but rough, strigose and rugose. Gular lobe emarginate. Scutellum large and transversely carinate. Elytra long, cylindric, a little dilated behind the middle and then finely, roundly narrowed to apex, where they are separately and very acutely unispinose. Apical spine long, narrowed, and very acute, situated in middle of apex. Elytral sculpture extremely dense, granulose, and very fine but rough; elytra nearly glabrous, pubescence very dark and inconspicuous; laterally elytra cover entire abdomen. Elytra dark green, but sides and ends obscure. Abdomen convex, shining, with very fine and sparse equal puncturation, without impression. Surface of abdomen covered with a very short but distinct, sparse puncturation. Legs golden, tarsi relatively short, first joint of hind tarsi as long as the following three together. Claws simply cleft, lower portion not turned inward.

This species is very easy to distinguish from the other species of the Oriental fauna. It comes in the group of *Agrili* characterized by the absence of prehumeral carina in the hind angles of prothorax. In this group it is very remarkable by its sculpture, form of front, elytra, and the end of the last ventral segment which is rounded and entire. I have in my collection only a single specimen of this remarkable species.

*Agrilus purpurifrons* H. Deyrolle. Plate 2, fig. 40; Plate 3, fig. 41.

An obscure, dark species, with purplish front. Rather rare in collections. One specimen of this species was taken in Singapore (*Baker 12609*).

*Agrilus acutus* Thunberg. Plate 3, figs. 15, 37.

This species is mentioned by Fisher as occurring in the Philippine Islands, but it was not seen by him.

I have added here a figure of this widely distributed species, of which I have in my collection many specimens from Java, Sumatra, Borneo, and the Philippines; also from eastern India, where it finds its western limit (Madras, Shembaganoor, etc.).

This species is bright blue, with very acute tips to the elytra, with a more or less developed transverse white fascia in the middle, and with a smaller preapical similar fascia on each elytron.

*Agrilus acutus* ab. *asphaltipennis* ab. nov.

This aberration diverges from the typical form by the black upper surface. The haired fasciæ are often absent. Under-surface blue, similar to the typical form. There are many specimens in my collection. This aberration probably occurs also in the Philippine Islands.

Patria: Sumatra, Medan (*Corporaal* leg.); western Java, Pengalingan, 1893 (*H. Frühstorfer* leg.).

*Agrilus piperi* Fisher. Plate 3, figs. 14, 36.

This species seems to be very similar to *A. luzonicus* Kerr. I have in my collection a specimen, which I had considered as *luzonicus*. In the original description of *piperi*, however, the two species are not clearly distinguished.

*Agrilus ornatus* Deyrolle.

This is a characteristic species of New Guinea. I have never seen a specimen from the Philippines, but there are some very similar forms in Oriental regions, and it is not impossible that the Philippine "*ornatus*" may constitute a separate species.

*Agrilus dajakorum* sp. nov. Plate 2, fig. 39; Plate 3, fig. 40.

Viridis, smaragdineus, nitidus, elytris apicem versus obscuratis, prope apicem vitta curta subsuturali albida. Infra smaragdineus, nitidissimus, abdominis nullo viridi aurato. Capite lato, latitudine partem thoracis anteriorem paullo superante, viridissimo, micante. Fronte plana, glabra, confertim transverse rugosa; lateribus sinuatis. Vertice linea impressa. Antennis longis, ab articulo quarto (incl.) dentatis, viridibus. Prothorace smaragdineo, nitido, longitudine  $1\frac{1}{4}$  latiore ad latera profunde impresso, aequaliter subtiliterque transverse rugoso.



Carina praehumerali curta fortique; carina laterali fere recta, carina submarginali subsinuata, ad apicem modeste divergente, in angulo basali cum illa laterali conjuncta. Lobo gulari manifeste, rotundato, integro. Scutello pentagonali, carinato. Elytris longis, attenuatis, planis, pone medium subdilatatis, dein apicem versus modeste attenuatis; apicibus trispinosis; spina media manifeste producta acutissimaque. Elytris subtilissime transverse granulosi, sculptura in parte apicali minutissima; sine impressionibus; colore elytrorum antice viridi-obscuro, dein obscuriore usque subnigro; aspecto elytrorum glabro, solum ad apicem vitta curta albida ornatis. Abdomine convexo, minutissime punctato; abdominis segmento primo granulis duobus approximatis ( $\delta$ ); segmento anali emarginato. Tarsis posticis longis, articulo tarsorum posteriorum primo tres articulos sequentes longitudine superante.

Patria: Borneo, Sandakan (*Baker*). Long. 9 mm.

Form elongate, parallel; head and prothorax splendid green; elytra in anterior part obscure green, then darker, apices nearly blackish. Head a little broader than prothorax; front glabrous, with splendid luster, with dense transverse striation; front sinuate laterally. A small linear impression on vertex. Prothorax  $1\frac{1}{2}$  times broader than long, with sides nearly straight. Prehumeral carina very well developed, short and convex. Lateral carina strong and nearly straight. Gular lobe large and broadly rounded. Antennæ long, green, dentate from fourth article. Scutellum pentagonal, carinate. Elytra long, equal, feebly shining, with a very fine sculpture, elongate, and very feebly attenuate to end where they are strongly trispinose. Median spine very strong and well developed. Color of apical part very dark, the sculpture there very fine, with a fine subsutural vitta before apex, consisting of fine white pubescence. Abdomen convex and more shining than upper surface, bright golden green. First abdominal segment with two small granulations on middle (male). Last ventral segment distinctly emarginate. The inner two-thirds of posterior femora with short, erect, dense, white pubescence (male). Tarsi long; first joint of posterior tarsi longer than the three following joints. Claws simply cleft, lower portion not inverted.

I have before me also one specimen of this species from Singapore (*Baker*).

*Agilus insularis* H. Deyrolle. Plate 2, fig. 13; Plate 3, fig. 30.

Two specimens of this species were taken at Sandakan, Borneo (*Baker*).

*Agrilus albogaster* H. Deyrolle. Plate 2, fig. 15; Plate 3, fig. 31.

Four specimens were taken at Sandakan, Borneo (*Baker*). To the original description of *Agrilus albogaster* I can supply the following characters:

1. Last abdominal tergite with projecting carina at tip.
2. The males of this species have two small granules on the middle of first abdominal segment and a white pilosity in the middle of prosternum.
3. Gular lobe rounded, without trace of emargination.

This species was described from Borneo and Singapore.

*Agrilus saundersianus* sp. nov. Plate 2, fig. 30; Plate 4, fig. 20.

I have had in my collection a species of *Agrilus* which I had considered to be *nigrocinctus* E. Saunders. Now, with the specimens from the Baker collection, come two specimens of a very similar species which I now recognize as the proper *nigrocinctus* of Saunders, and the species of my own collection is a very similar, new species. *Agrilus nigrocinctus* is relatively common in Mindanao. I consider it sufficient to indicate only the distinctive characters of my new species, as follows:

1. Length, 6 millimeters. General form and size as in *A. nigrocinctus*; a strongly developed, medially produced carina on pygidium; the system of pubescence distribution is similar to that of *nigrocinctus*.
2. Head less convex, front more depressed, a little narrower, and greenish. Vertex not obscure.
3. Prothorax a little shorter, green, unicolorous, without golden margins. Lateral carina straight (in *nigrocinctus* a little sinuate), prehumeral carina more convex, submarginal carina more convergent to base and joined to lateral carina before base (not in basal angle as in *nigrocinctus*).
4. Gular lobe very distinctly emarginate, separated from remainder of prosternum by a deep transverse impression. In *nigrocinctus* this emargination is very feeble and the gular lobe is separated rather indistinctly from prosternum.
5. Scutellum longer.
6. Elytra similar to those of *nigrocinctus*; two apical spines shorter and more distant.
7. Abdomen and upper surface paler, more shining; abdomen golden green, upper surface bright green. Obscure elytral vitta not so apparent and not so dark. The male has two approximate granulae on first abdominal segment. The other characters, namely, those of antennae and legs, are the same as in *nigrocinctus*.

Patria: Philippines (coll. *Obenberger*). Long. 6 mm.

*Agrilus nigrocinctus* E. Saunders. Plate 2, fig. 12; Plate 3, fig. 28.

Described from the Philippines. I have added to this work a figure made from the specimens in my collection.

*Agrilus inquinatus* E. Saunders. Plate 2, fig. 16; Plate 3, fig. 32.

Some specimens of this species come from Basilan Island and from Dapitan, Mindanao (*Baker*). The species is very similar to *Agrilus simillipictus* sp. nov. from Borneo, but differs in the following important details:

1. Head more convex. Front narrower and longer.
2. Thorax different; median lobe of anterior margin more strongly advanced toward vertex. Lateral and submarginal thoracic carina anteriorly more divergent and more distant. Prehumeral carina more convex, longer. Prothorax with better-indicated longitudinal impression in middle.
3. Pygidial carina shorter and less developed.

*Agrilus simillipictus* sp. nov. Plate 2, fig. 34; Plate 4, fig. 24.

*Agrilo albogastris* H. Deyrolle simillis ac valde affinis. Colore aureo-viridi, prothorace concolore. Elytris pone medium macula obscura regulari ac rotunda, obscure pubescente ornatis. Elytrorum superficie pube candida regulariter tecta. Capite minus convexo quam apud *albogastrum*, fronte minus convexa, minus fortiter impressa; thorace concolore, in angulis anticis latitudinem maximam attingente (apud *albogastrum* in tertia parte anteriori), carina praehumerali distincta, longa, convexa, in medio thoracis longitudinis cum carina laterali conjuncta; carina submarginali cum illa valde divergente, in angulis basalibus juncta. Elytris viridibus, etiam in apice concoloribus, pube multo subtiliore quam ut *albogastrum* tectis, apicibus bidentatis. Macula obscura valde divergente: haec apud *albogastrum* fasciam transversam efficit, hic macula illa rotunda latera non attingit atque etiam anterior quam apud *albogastrum* posita est. Segmento anali emarginato; lobo gulari paulo sed distinctissime emarginato (apud *albogastrum* solum indistincte truncato). Tergitum ultimum quam apud *albogastrum* carina media producta ornatum. Tarsorum posteriorum articulo primo tres sequentes longitudine superante (apud *albogastrum* tres sequentes vix longitudine attingente).

Patria: Borneo, Sandakan (*Baker*). Long. 5.5–6 mm.

This species is very similar to *Agrilus albogaster* H. Deyrolle, but differs in the following characters:

Head not so convex, and anteriorly (seen from above) less prominent. Color of upper surface paler, bright olive green, uniform. Sculpture of prothorax similar, but lateral margins straight and attenuate from anterior angles to base. Gular lobe feebly but very distinctly emarginate. The coloration of the elytra is very different. They are unicolorous, only behind

middle with a circular, regular, obscure macula which is also obscurely haired. Remaining surface clothed with white, close pilosity, closer before apex. In *albogaster* the elytral macula is placed more apically and is fasciform, in a large transverse band; granulation stronger and not so close; the pilosity of elytra is golden or yellow and not so close as in the new species. First joint of hind tarsi longer than the three following joints. Last ventral segment emarginate; last abdominal tergite (as in *albogaster*) with distinct projecting carina. Claws broadly dentate, the lower portion not inverted.

*Agrilus aureocoeruleans* sp. nov. Plate 2, fig. 26; Plate 4, fig. 17.

Parvus, nitidus, subelongatus. Capite thoraceque aureis, thorace macula quando cuprea ornato; elytris coeruleis, pube uniformi curta aurea. Capite lato, convexo, oculis convexis, non prominulis. Fronte elongata, vertice levissime impresso. Fronte alutacea, nitida, subglabra, subtiliter transverse rugosa, lateribus leviter subsinuatis ac tenuiter distincte canaliculatis. Antennis aeneis, ab articulo quarto (incl.) dentatis. Thorace longitudine  $1\frac{2}{3}$  latiore, lateribus subrotundato, in medio latis-simo, glabro, ante basim transverse impresso, in angulis anterioribus impressione levi; disco saepe cuprato; transversaliter subtiliterque ruguloso. Carina praehumerali curta, forti, curvata, carina laterali leviter curvata, carina submarginali antice cum ea valde divergente, postice ei approximata atque in angulis basalibus cum ea conjuncta. Elytris subplanis, tenuissime granulosis, pone mediam subdilatis, ad apicem attenuatis ac hic separatim ac denticulatis. Lobo gulari integro, rotundato. Abdomine convexo, aeneo, segmento abdominis ultimo integro, apice rotundato. Pedibus aeneis, tarsis curtis, tarsorum posteriorum articulo primo tres sequentes longitudine superante.

♂. Abdominis segmento primo in medio granulis duo approximatis ornato. Segmento anali subtruncato.

Patria: Borneo, Sandakan (*Baker*). Long. 4-5.3 mm.

Small, elongate species. Head and prothorax golden; prothorax in the middle often with a cupreous luster. Head broad and convex, but not broader than anterior margin of prothorax. Eyes convex. Front elongate, narrow, a little subsinuate at sides, inner margin of eyes distinctly and narrowly channeled. Front shagreened, with fine transverse rugosity. Antennae brassy green, denticulate from fourth joint. Prothorax 1.4 times broader than long, anterior margin sinuate, on sides



gently rounded, having the greatest width near the middle; before base with a large transverse depression; also depressed within the anterior angles. Prothoracic rugosity fine and transverse. Scutellum large and transversely carinate. Elytra long and a little depressed on disk, with very fine sculpture, consisting of subtle granulation. Entire surface covered with a fine, short, regular, golden pilosity. Elytra a little broadened behind middle and regularly narrowed to apex which is separately, very shortly biemarginate or bidentate; this emargination is very feeble. Last ventral segment rounded (female), or truncate (male); first abdominal segment armed with two small granules in middle (male). Undersurface shining, very finely punctate, and pubescent; tarsi short; first joint of posterior tarsi longer than the three following together. Claws simply cleft, inner portion not inverted. Very distinct from all known species from Borneo.

*Agrilus falsulus* sp. nov. Plate 3, figs. 2, 43.

Infra aeneo-viridis, nitidis, supra obscure cyaneus, solum elytrorum basi tenuiter aenescens. Subcylindricus, elongatus. Capite lato, fronte alutaceo, lateribus paulo subsinuatis; antice subtiliter transverse rugosa et albido pilosa. Thorace longitudine  $1\frac{1}{2}$  latiore, in parte tertia anteriori latissimo, ad basim sinuate attenuato, antice bisinuato, lobo medio producto, carina praehumerali curta convexa, carina marginali bisinuata, carina submarginali fere recta, cum illa ad basim forte convergente atque in angulis posticis conjuncta. Disco depressione transversa ante basim atque utrinque impressione laterali; dense subtiliterque transverse rugoso. Lobo gulari emarginato. Elytris disco subdepressis, pone medium dilatatis, minute rugosis atque uniforme obscure pubescentibus; solum prope suturam in parte basali atque distinctius prope apices albido pilosis. Apicibus bidentatis; dente interiore fortiore ac longiore. Subtus nitidus, convexus minute sparseque punctatus ac albido pilosus; segmento anali late emarginato. Tarsis posterioribus satis longis, tarsorum posteriorum articulo primo longitudine tres sequentes adaequante. Unguiculis simpliciter fissis.

♂. Segmento primo abdominali in medio granulis duabus approximatis ornato. Prosterno medio erecte dense albido piloso.

Patria: Singapore (*Baker*). Long. 5.5 mm.

Form of *Agrilus albogaster* Deyrolle. Upper surface dark blue, without strong luster; only base of elytra narrowly æneous.

Head rather broad, front laterally feebly sinuate, shagreened and sparsely punctured; only preoral third part finely transversely rugose and clothed with white pilosity. Margins of front channeled. Vertex feebly but distinctly impressed and longitudinally striate. Prothorax finely transversely striate, having the greatest width in anterior third part, 1.25 times broader than long. Scutellum carinate. Gular lobe very distinctly emarginate. Elytra of the form of *A. albogaster* Deyrolle, but less narrowed and sharply bispinose at tip; interior spine stronger, better developed, and very acute. Elytra leaving uncovered a very small part of lateral margins of abdomen. Entirely clothed with an obscure pubescence; only in basal part near suture and on sutural part of apices the pubescence more distinct and silky white. Last ventral segment emarginate. Undersurface more shining, æneous, very finely and sparsely punctured, and clothed with a very fine, short, white pubescence. Antennæ greenish, dentate from fourth joint. Claws simply cleft, lower portion not inverted.

*Male*.—In the middle of first abdominal segment with two approximate granules. Middle of prosternum with close erect white pilosity.

*Agrilus bidentellus* sp. nov. Plate 3, fig. 8; Plate 4, fig. 7.

Aeneus, nitidus, elongatus, subconvexus. Capite convexo, oculis magnis, margine thoracis anteriore paulo latioribus. Fronte modice convexa, alutacea subtiliter sparse punctata, tenui lateribus paulo sinuatis; in parte praeorali pube brevi albido ornata. Vertice longitudinaliter dense striato, paulo impresso. Thorace longitudine  $2\frac{1}{2}$  latiore, margine anteriore bisinuato, lobo medio manifeste producto, latitudinem maximam in tertia parte anteriore attingente, dein ad basim et ad angulos anteriores modice attenuato; impressione lata transversa praebasali minore que obliqua in angulis anticis. Carina praehumerali carinae marginali approximata et cum ea in medio thoracis longitudinis conjuncta, convexa; carina marginali recta, carina submarginali cum illa in angulis posticis conjuncta, antice modeste divergente. Thorace in disco fortiter subrotundate transverse striato. Thorace capiteque glabris. Scutello transverse carinato. Elytris subconvexis, pone medium subdilatatis, dein ad apicem modice attenuatis; apicibus separate truncatis, subemarginatis; angulis exterioribus hujus emarginationis subspinosus. Tota elytrorum superficie pube regulari aequalique brevi et albida,

ad suturam paulo densiore ornata, transverse, non dense, subtiliter rugosa. Gulari lobo integro, rotundato; abdominis segmento ultimo rotundato. Subtus convexus, nitidus, minutissime ac sparsissime punctatus atque albide pubescens; pedibus antennisque æneis. His ab articulo quarto (incl.) dentatis. Tarsis? Unguiculis?

Patria: Borneo, Sandakan (*Baker*). Long. 3.9 mm.

This species resembles very much *Agrilus roscidus* Ksw., of Europe.

Brassy green, form rather robust and convex. Head convex; eyes broad and laterally a little prominent. Front laterally a little sinuate, with small, fine lateral channel; anterior margin covered with very fine white pubescence. Front shagreened, sparsely punctured. Vertex feebly and broadly impressed, densely and longitudinally striate. Antennæ æneous, dentate from fourth joint. Prothorax 1.5 times wider than long, anterior margin bisinuate; median lobe extended toward head. Prothorax moderately convex, having the greatest width in anterior third part, with a large transverse depression before base and a smaller impression within the anterior angles; sides moderately attenuate to base and rounded to the anterior angles. Gular lobe porrect, entire, and rounded. Scutellum transversely carinate. Elytra convex, having the greatest width behind middle, where they leave uncovered a small lateral part of the first tergite; surface with a fine and rather sparse transverse rugosity and clothed with very fine, regular, short, white pubescence. Pubescence a little closer to suture. Apices of elytra truncate and feebly emarginate; exterior angle of this emargination feebly spinose. Abdomen and legs shining, paler than upper surface, very finely and sparsely punctate, with traces of very short, sparse, fine, white pubescence. Last ventral segment rounded, entire.

*Agrilus intrusus* sp. nov. Plate 2, fig. 9; Plate 3, fig. 25.

Elongatus, tenuis, cylindricus, bronceus, nitidus, subtiliter sculptus. Capite convexo, fronte alutacea viridi-ænea, sparse ac subtiliter singulatim punctata, ad partem ovalem leviter convergenti; anti dense albido pilosa; vertice impresso, isolate punctato. Antennis viridi-æneis. Thorace longo, latitudine ac longitudine fere aequalibus, lateribus rectis, subparallelis, solum ad basim paulo convergentibus. Sculptura minuta rugarum transversalium. Carina praehumerali longa, sinuata, parum

convexa, in prima longitudinis parte tertia cum carina laterali juncta. Illa recta, solum antice paululo declivi. Carina submarginali antice divergente, ad basim iam ante angulum posteriorem cum carina laterali juncta. Thorace convexo, solum ante scutellum impressione levi circulari, unaque simili obliqua in utroque angulo antico. Gulari lobo medio emarginato. Scutello transversim carinato. Elytris longis, tenuibus, pone medium leviter dilatatis, dein ad apicem longe attenuatis ac apicibus bidentatis; spatio inter hoc dentes curtos circulariter emarginato. Carina humeralis elytrorum absente; superficie tota pube brevi aequali pilorum albosericeorum ornata. Abdomine aeneo, nitido, sparse albo pubescente; hac pilositate lateribus sterni densiori. Segmento anali apice emarginato. Tarsis longioribus, articulo tarsorum posteriorum primo tres sequentes longitudine adaequante. Unguiculis simpliciter dentatis.

Patria: Philippinas (coll. *Obenberger*). Long. 3.5 mm.

This species is very easily to be distinguished from the others by the small, narrowed, attenuate, elongate form and the equal pubescence of elytra, which are bidentate at tip.

Long, narrow, cylindrical, æneous, with rather strong luster; undersurface paler and more shining. Head rather convex and broad, laterally nearly parallel, only at base feebly narrowed, convex, with a feeble oblique impression on each side in the anterior angles and with a feeble rounded impression before scutellum. Gular lobe distinctly but rather feebly emarginate. Scutellum transversely carinate. Elytra very long and rather narrowed, a little dilated behind middle, then moderately narrowed to apex, where they are separately bidentate; these two teeth are short and form the sides of a small circular emargination between them. Sculpture of elytra transverse and with fine, squamiform rugosity; the entire surface covered with equal, short, silky, white pilosity. Underside more shining, rarely and very shortly haired; the white hairs more densely agglomerated on sides of prosternum, mesosternum, and metasternum. Legs rather long, æneous, first joint of posterior tarsi as long as the three following together. Claws simply cleft, lower portion not turned inward. Last ventral segment emarginate at tip.

The single type in my collection resembles very much some specimens of the European *Agrilus roscidus* Ksw. and comes from the collection of Meyer-Darcis, which I determined for Staudinger and Bang-Haas.



*Agrilus kheili* sp. nov. Plate 3, figs. 13, 35.

Corpore satis robusto, subcylindrico. Capite thoraceque nigris, elytris duobus partibus anterioribus aeneis, lateribus violascentibus, tertia parte apicali nigra, corpore subtus, fronte, pedibusque aeneis, antennis violascentibus, thorace aeneomarginato. Capite satis magno, lateribus haud prominulis, vertice impresso, antennis ab articulo quarto dentatis. Gulari lobo emarginato. Thorace similiter quam apud *discicollis* instructo, carina praehumerali curta, forti. Elytris in parte aenea allopilosis, in parte apicali nigra fascia solum curta subsuturali albida. Segmento anali apice emarginato. Tarsis brevibus, unguiculis profunde fassis, partibus interioribus inversis.

Patria: Mindanao (coll. Obenberger). Long. 6 mm.

Very similar to *Agrilus discicollis* H. Deyrolle, of similar color and form, but more robust, larger, and more cylindrical, with distinctly wider front; sides of front distinctly more parallel. Gular lobe distinctly sinuate anteriorly. First joint of posterior tarsi distinctly shorter, as long as the two following joints united. Hind tarsi very short, only about half as long as tibiae. Claws cleft in such a manner that the lower portion is turned inward, nearly touching that of opposite side. Abdomen rather convex, last ventral segment emarginate at tip.

In my collection is a single specimen of this species, received from Staudinger and Bang-Haas.

I dedicate this species to the Nestor of the entomologists of Czechoslovakia and a competent judge of Oriental and Neotropical Lepidoptera, Prof. Napoleon M. Kheil of Prague.

*Agrilus discicollis* H. Deyrolle.

A widely distributed Oriental insular species. Rather common in Sumatra.

*Agrilus albocinctus* Fisher. Plate 2, fig. 3; Plate 3, fig. 19.

The four specimens before me came from Dapitan, Mindanao (Baker). A very distinct, rather robust species.

*Agrilus agrestis* H. Deyrolle. Plate 2, fig. 11; Plate 3, fig. 27.

In the Baker material sent to me for determination was this species from Sandakan, Borneo. It is very remarkable for the broad, convex, and short body. Gular lobe feebly, broadly emarginate; ventral segment on tip with short and angulate but very deep emargination. Claws simply cleft, lower portion not inverted, but they are nearly as long as the broader, external part of the claw.

*Agrilus gratiosus* H. Deyrolle.

This species is rather common in Borneo and Sumatra. Some specimens were taken in Sandakan, Borneo (*Baker*).

*Agrilus subpubescens* Fisher. Plate 2, fig. 25; Plate 4, fig. 16.

The two specimens sent were from Dapitan, Mindanao (*Baker*). In this connection an error was committed in Fisher's key to the species.<sup>7</sup> Both *A. subpubescens* Fisher and *A. zamboangensis* Fisher were placed under "16" in the key, species with carinate hind angles of pronotum. In reality, both species have these angles not carinate and should be placed with *bakeri* Kerremans, *rotundipennis* Fisher, and *inconstans* Fisher. The description is correct in the original diagnosis of both species.

*Agrilus zamboangensis* Fisher. Plate 2, fig. 24; Plate 4, fig. 15.

There were five specimens of this species in this collection, four of them from Dapitan, Mindanao; a single specimen from Kolambugan, Mindanao (*Baker*), belongs in the vicinity of *bakeri* Kerremans, *rotundipennis* Fisher, and *inconstans* Fisher. The position under "16" in the key of Fisher<sup>7</sup> is erroneous.

*Agrilus inconstans* Fisher. Plate 2, fig. 14; Plate 3, fig. 29.

The examples sent to me are from Dapitan, Mindanao (*Baker*).

*Agrilus viridicolor* sp. nov. Plate 2, fig. 22; Plate 4, fig. 13.

Viridis, smaragdineus, sutura marginibusque lateralibus elytrorum obscuratis. Capite lato, convexiusculo, linea media lineari; fronte longiore, lateribus subsinuatis, transversaliter subtiliterque rugoso. Thorace lato, lateribus rectis, longitudine  $1\frac{3}{8}$  latiore, carinula prae humerali deficiente; carinula marginali acuta, fere recta, carinula submarginali antice paulo divergente, postice subparallela nisi cum carina marginali conjuncta; in disci medio depressionibus duo indistinctis; sculptura disci subtili densaque. Scutello transversaliter carinato. Elytris longioribus, apice subtiliter denticulatis ac separate rotundatis, pube brevissima obscura indistinctaque tectis; pone medium prope suturam pilis aliquot auratis plus distinctis intermixtis; sculptura aspera, subtilissima. Antennis nigris, brevioribus ab articulo quarto (incl.) dentatis. Lobo gulari medio distincte emarginato; segmento anali integro, apice rotundato; segmento

<sup>7</sup> Philip. Journ. Sci. 18 (1921) 356.

abdominali primo in medio elevatione parva granuliforme ornato ( $\sigma$ ). Abdomine pedibusque viridi-aeneis, nitidis, subtilissime punctatis et pube minutissima albida sparse pilosis. Unguiculis fortiter dentatis, dentibus intus non prominentibus. Primus tarsorum posticorum articulus longitudine fere tres sequentes adaequat.

Patria: Sulu Islands (coll. Obenberger). Long. 6 mm.

Color bright green; undersurface paler and more shining. A space along lateral margin and suture of elytra obscure. Head broad and convex, not broader than anterior margin of prothorax, with a linear impression in middle of front. Antennæ dark, blackish, serrate from fourth joint. Thorax large, with two feeble impressions in the middle and in the anterior angles. Prehumeral carina absent. Sculpture of prothorax very dense and fine, consisting of dense, slightly arcuate striæ. Elytra  $2\frac{3}{4}$  times as long as broad, having the greatest width behind the middle; regularly convex, very equally and finely granulate, separately rounded and very finely denticulate at apex. Pubescence of elytra dark, not very distinct; only in apical and sutural region some paler and yellowish hairs are intermingled. Undersurface convex, covered with very short, fine, sparse, white pilosity. First abdominal segment (male) armed with a small, granuliform but very distinct elevation.

In my own collection is one specimen of this species, labeled as cited. Although it does not belong with the Buprestidæ sent by Baker, it is important to describe it with the other Philippine forms.

*Agrilus subvittatus* Fisher. Plate 2, fig. 18; Plate 3, fig. 34.

The present specimens are from Dapitan, Mindanao; also one specimen from Basilan Island (*Baker*).

*Agrilus orientis* sp. nov. Plate 2, fig. 28; Plate 4, fig. 18.

Viridi-aeneus, robustus, curtulus, elongatus, obscurus, minute ac rugose sculptus, parum nitens. Capite obscure viridi-aeneo, convexo, medio sulcato, fronte transverse, dense ac satis fortiter rugosa, antennis viridibus, ab articulo quarto dentatis. Fronte satis lata, lateribus leviter rotundatis. Thorace lato, longitudine fere  $1\frac{3}{4}$  latiore, lateribus leviter rotundatis, ad basim paulo plus attenuatis, in medio latitudine maxima; sculptura transversa rudissima sed subtili densissima haud nitidus. Carina praehumerali deficiente seu perparum distincta, carina laterali

leviter sinuata, carina submarginali paulo divergente, fortiter sinuata ac ne basi quidem cum illa laterali juncta; impressione parva circulari ante scutellum ac depressione obliqua in angulis anticis lateralibus. Gulari lobo distincte emarginato. Scutello transverse carinato. Elytris fortibus, abdomen totaliter tegentibus, convexis, pone medio paululo dilatatis, dein ad apicem attenuatis, ac ibi curte separatim rotundatis ac minutissime denticulatis. Sculptura minutissima, sed densissima, granulosissima ac rudi, transversali. Sine pube distincta; solum prope apicem sutura fascia tenuissima pilorum parum distinctorum alborum marginata est. Abdomine convexo, parum nitido, dense albo, curte pubescente. Abdominis segmento ultimo curte sed distinctissime emarginato.

Patria: Sulu Islands (coll. *Obenberger*). Long. 6 mm.

This species resembles in color *Agrilus angustulus* Illiger, of Europe, but it is very robust.

Head convex, with impressed longitudinal line. Front on sides finely feebly rounded, nearly glabrous, transversely distinctly granulate. Antennæ bronzy, dentate from fourth joint. Gular lobe distinctly emarginate. Prothorax broad, nearly  $1\frac{2}{3}$  times as broad as long, with the greatest width in the middle, on sides moderately rounded, and toward base a little more attenuated; hind prehumeral carina absent, lateral carina feebly sinuate, submarginal carina anteriorly very distant from it, more strongly sinuate, posteriorly a little approximate to but not joined with lateral carina, and distant also in the hind angles. Elytra robust, roughly but very finely and densely sculptured, rounded at tip, nearly hairless, only the suture near apex with some white, silky, not very distinct hairs. Abdomen densely covered with fine white pubescence; last ventral segment shortly but very distinctly emarginate. Claws simply cleft, lower portion not turned inward.

*Agrilus encaustus* sp. nov. Plate 2, fig. 23; Plate 4, fig. 14.

Niger, subelongatus et subattenuatis. Capite parvo, parum convexo, vertice parum impresso; fronte attenuata, longa, lateribus subsinuatis. Antennis longioribus, opacis, ab articulo quarto (incl.) denticulatis. Articulis triangularibus, singulis latitudine longioribus. Pronoto convexo, longitudine  $1\frac{1}{2}$  latiori, antice fortiter bisinuato, lobo medio valde proeminente; lateraliter largitudinem maximam prope angulos anticos attingente, dein ad basim sinuate attenuato et subcordiformi; rugis regula-



ribus transversalibus instructo. Carina prae humerali indistincta; carina marginali bene expressa, acuta et fere recta; carina submarginali cum carina marginali in angulis posticis conjuncta. angulos anticos versus valde divergente. Lobo gulari medio distincte sed parum profunde emarginato. Scutello carinato. Elytra longioribus, subattenuatis, subconvexis, disco modeste deplanatis, sicut alterae corporis superioris partes, glabris, solum in parte postica prope suturale pilis brevissimis albidis raris ac irregularibus ornatis. Apicibus separate rotundatis ac minutissime denticulatis. Abdominis segmento ultimo fortiter emarginato. Pedibus ac abdomine obscure viridi-aeneis, subnitidis. Unguiculis fortiter dentatis. Tarsorum posticorum articulus primus longitudine tres sequentes adaequat.

Patria: Sulu Islands (coll. Obenberger). Long. 5.8 mm.

This species is very remarkable for the deep black color and feeble luster of the upper surface and for the form of the gular and the anal emargination.

Head relatively small, without luster, plane, transversely striate, without pubescence; front very narrow with subsinuate sides; vertex distinctly impressed. Eyes not prominent. Prothorax subcordiform, having the greatest width at anterior angles; sides subsinuate and subattenuate to base. Without distinct depression on the middle; in the anterior angles more distinctly impressed. Scutellum distinctly transversely carinate. Elytra finely, equally, and densely rugose, feebly subdepressed on back; regularly narrowed to apices, the greatest width behind the middle. Lateral parts of abdomen entirely covered, not visible from above. Apices of elytra separately rounded and finely denticulate. On apical and sutural part of elytra a very indistinct, very short, fine, irregular, white pilosity. Undersurface paler and more shining than upper surface; gular emargination feeble, but very distinct; emargination of last ventral segment deep and strong. Tarsi short; first joint of posterior tarsi as long as the three following joints. Claws dentate, the teeth not convergent.

*Agrilus fisheri* nom. nov. Plate 2, fig. 17; Plate 3, fig. 33.

The name *fulvovittatus* Fisher being already employed by E. Saunders for a species from Japan, I must change it; I propose the name *fisheri*.

In the collection sent to me there were several specimens, all from Dapitan, Mindanao (*Baker*).

*Agrilus harlequin* sp. nov. Plate 2, fig. 4; Plate 3, fig. 20.

Nonnullis generis *Sambus* speciebus simillimus. Convexus, cylindricus, curtus, niger, modice nitidus, maculis densis pilorum fulvorum irregularibus; his pilis apice elytrorum fasciam transversam formantibus; inter hanc pilositatem prope suturam elytrorum nonnullis maculis albis intermixtis; quae pilositates ornamentum marmoratum efficiunt. Capite lato, convexo, fronte satis tenui, lateribus ad anticem paulo attenuatis, ac levissime sinuatis. Violacea, dense luteo, antice albedo pilosa. Antennis nigris, ab articulo quarto dentatis. Thorace convexo, in quarta basali parte subparallelo, dein ad capitem fortiter, fere recte attenuato, transversim rugoso, ante scutellum paullo depresso, carina praehumerali curta ac convexa, carina laterali fere recta, carina submarginali in medio sinuata, antice divergente, in basi cum illa laterali juncta. Lobo gulari fortiter prominulo, rotundato, integro. Elytris convexis, curtis, robustis, pone medium dilatatis, dein fortiter attenuatis, apice separatim rotundatis ac denticulatis; usque ad  $\frac{3}{4}$  longitudinis ornameto macularum fulvorum ac (prope suturam) albidarum, dein fascia obscura transversa denudata (sed tamen pube vix visibili nigra) parte apicali lutea; fascia illa obscura ad suturam macula minuta albida obliqua ornata. Abdomine convexo, aeneo-violaceo, densissime luteo pubescente. Segmento anali apice curtissime, sed distincte emarginato. Tarsis curtis; tarsorum posticorum articulo primo duo sequentes longitudine adaequante. Unguiculis fortiter, sed simpliciter dentatis, partibus internis haud inversis.

Patria: Borneo, Kinabalu (coll. *Obenberger*). Long. 4.5 mm.

I have a few specimens of this very remarkable species in my own collection. It is broad, short, narrowed to the caudal apex, and very convex.

Head, prothorax, and elytra very densely covered with yellow pubescence; in some places on elytra the pubescence is interrupted and so presents a marbled appearance; in the pubescence white spots are intermixed as also on thorax before the carinate scutellum and the small antescutellar depression; on elytra are some white spots near suture, forming an irregular, interrupted band. Ornamentation of elytra behind three-fifths of elytral length interrupted by a large, transverse, denuded fascia; in reality it is covered with very fine, black pilosity; there is a sutural oblique white spot; apex behind this obscure fascia entirely covered with dense yellow pubescence. Sculpture of elytra rather strong. Abdomen convex, very densely

covered with yellow pubescence; pubescence of prosternum more white. Last ventral segment at end very shortly and feebly but distinctly emarginate. Gular lobe entire. Claws simply but strongly cleft, lower portion not turned inward.

In ornamentation this species rather resembles some species of the genus *Sambus*, and differs in size and form from all the other Oriental species known to me.

*Agrilus sandakanus* sp. nov. Plate 2, fig. 37; Plate 3, fig. 38.

Cupreus, satis nitidus; supra obscuratus, parum nitens; capite lato, parum convexo, fronte lata, latitudine longitudinem fere adaequanti, lateribus subparallelis, paulo sinuatis, sculptura dense rugulosa, pube desuper brevi, recumbente, albida radiali. Vertice parum impresso, dense longitudinaliter striato. Antennis cupreis, ab articulo quarto dentatis. Thorace longitudine  $1\frac{1}{2}$  latiore, latitudinem in medio maximam attingente, dein ad apicem paulo, ad basim fortius sinuato-attenuato. Margine anteriori leviter bisinuato, lobo medio haud producto. Carina praehumerali longa, ad basim convexa, dein carinae laterali valde approximata ac cum ea parallela usque ad tertiam partem anteriorem distincta. Carina laterali fere recta, carina submarginali cum ea antice modice divergente in basi juncta. Thoracis lateribus (exclusive spatio inter carinae praehumerali ac lateralem) pube curta densissimaque albida marginatis. Lobo gulari modice emarginato. Elytris subrobustis, pone medium levissime dilatatis, dein ad apicem attenuatis ac separatim rotundatis. Sculptura minutissima, densa; superficie tota pube brevissima, parum apparenti, luteola, huc ibique obscuriori tecta; inter hac pubescentia duo maculis ovalibus parvis albidis: una ad suturam ante tertiam partem anteriorem, altera in tertia parte posteriori prope suturam positis. Abdomine convexo, minute sculpto ac brevissime sparse pubescente. Partibus lateralibus pro-, meso- ac metasterni pube densissime albida ornatis. Ultimo abdominis segmento integro, rotundato. Tarsis curtis, tarsorum posticorum articulo primo duo sequentes longitudine adaequante. Unguiculis simpliciter dentatis.

Patria: Borneo, Sandakan (*Baker*). Long. 6 mm.

Cupreous, undersurface clearer and more shining. Upper surface obscure, finely granulose, with two white spots on each elytron near suture. Convex, cylindric, relatively robust. Head broad, nearly as long as broad, on sides nearly parallel, feebly sinuate. Sculpture dense and rugose, covered with sparse, fine, recumbent white radial pilosity. Vertex feebly

depressed and densely longitudinally striate. Prothorax nearly 1.5 times as broad as long, the greatest width near the middle, anteriorly feebly rotundate, posteriorly rather strongly sinuate-attenuate to base. Prehumeral carina very long, in anterior part parallel and very approximate to lateral margins. Gular lobe distinctly emarginate. General sculpture of surface of prothorax fine and dense; disk with a transverse prescutellar depression, and with an oblique impression in the anterior angles. Scutellum transversely carinate. Elytra very finely sculptured, on sides nearly parallel, behind middle feebly enlarged and then narrowed moderately to apex, which is separately and finely rounded. Entire surface of elytra covered with fine, dense, very short, golden, in some places more obscure and not very distinct pubescence. Two white spots on each elytron, one before the anterior, the other in apical third. Abdomen convex, shining, densely and finely haired; last ventral segment entire, not emarginate. Legs cupreous, tarsi short, first joint of posterior tarsi as long as the next two together. Claws simply cleft, lower portion not turned inward.

It is very interesting that this species is extremely near to another species of my collection from Key Islands, described below.

*Agrilus xenius* sp. nov. Plate 2, fig. 38; Plate 3, fig. 39.

Of the same size and coloration as the preceding species; differing from it as follows:

1. Head wider.
2. Prothorax wider, with more acute hind angles, laterally less narrowed to base and more sinuate. Prehumeral carina similar but longer, reaching to anterior fourth.
3. Elytra of similar form and sculpture but apically produced in a short but very acute, denticulate spine. The two white spots of *A. sandakanus* are replaced here by similar, golden spots, the anterior longer. Also in the humeral depression of elytra with golden pubescence.
4. Abdomen more densely pubescent; sides of abdominal segments between the yellow pubescence with a yellow spot.
5. Lateral parts of prosternum, mesosternum, and metasternum covered with dense yellow pubescence.

I have six specimens of this species in my collection; two are in the collection of Baron Houbek-Mühlheim. I have seen some specimens also in material from Staudinger and Bang-Haas, Dresden, sent to me for determination.



It is very interesting to find such affinity in two insects from localities so widely separated. The presence of a spine on the elytron in one of two such related forms is clear proof that this character cannot be used to divide the Agrili into natural groups and that it is of not greater than specific value.

Patria: Key Islands. Length, 6 to 7.5 millimeters.

*Agrilus atratulus* sp. nov. Plate 2, fig. 19; Plate 4, fig. 8.

Robustus, convexus, obscure cupreo-violaceus, lateribus thoracis ac vertice cuprescentibus, fronte viridi, smaragdinea. Subtus bronceus. Capite convexo, fronte lata, transverse rugoso, lateribus levissime rotundatis, fere rectis, antennis aureis, ab articulo quarto dentatis. Vertice impresso, longitudinaliter rugoso. Thorace convexo, longitudine  $1\frac{1}{2}$  latiori, in basi latissimo, ad anticem paulo, dein fortius rotundato-attenuato, antice leviter bisinuato, carina præhumerali convexa, curti, valde divergenti, forti, carina laterali fere recta, carina submarginali iam ante basim cum illa laterali juncta; disco convexo, ante basim transverse subtiliter impresso, depressione obliqua laterali in utroque angulo antico; transverse rugoso, in medio fascia indistincta pilorum albosericeorum; huc et ibi pilis nonnullis albosericeis. Scutello latissimo, transverse carinato. Gulari lobo modice emarginato. Elytris robustis, atratulis, obscure cupreo violaceis, subtiliter sculptis, lateraliter partes laterales abdominis haud obtequantibus, pube obscura indistincta, solum secundum suturam a basi usque ad medium fascia aequali pilorum albosericeorum; ibi hac fascia paulo dilatata ac ad elytrorum mediam producta, "sagittam" simulante. Una macula siunti alba prope suturam in parte quarta apicali. Abdomine aeneo, aequaliter sparse brevissime albo pubescente. Segmento ultimo apice breviter sed profunde emarginato. Unguiculis longe fissis.

Patria: Sulu Islands (coll. *Obenberger*). Long. 5.5 mm.

A broad, robust, convex species. Dark violaceous, with cupreous luster, sides of prothorax and vertex cupreous, front bright green. Head convex, front large, with transverse rugosity; sides nearly straight, feebly rotundate. Antennæ brassy green or golden, dentate from fourth joint. Vertex longitudinally impressed and very distinctly longitudinally striate. Prothorax broad, nearly 1.5 times as broad as long, the greatest width at base, at first feebly, then more strongly attenuate and rounded to apex. Prehumeral carina strongly developed, very

divergent from lateral carina; the two prehumeral carinæ of prothorax, observed from above, a little convergent to apex. Prothorax nearly hairless, only here and there with some white silky hairs; in the middle with a very fine, not very distinct, narrow, white longitudinal fascia. Gular lobe distinctly emarginate. Scutellum very large and strongly transversely carinate. Elytra finely sculptured, rather robust, convex, dark violaceous with very feeble cupreous luster, nearly hairless (in reality covered with a very inconspicuous and obscure pilosity); on each side of suture a longitudinal fascia, reaching to middle of elytra, there dilated transversely and a little obliquely, forming the figure of an arrow. A similar spot on suture in apical fourth part; apices rounded. Undersurface bronzy covered with very short, white pubescence. Last ventral segment shortly but deeply emarginate. Claws deeply bifid, lower portion turned inward feebly.

This species can be easily distinguished from other species of the Oriental Region by its form, sculpture, size, ornamentation, etc.

*Agrilus oppositus* sp. nov. Plate 3, fig. 9; Plate 4, fig. 6.

Aeneus, nitens, fronte antice et lateribus aurea, medio ac postice violacea, thorace violaceo. Elytris pube uniformi albida, pone medium fascia transversa denudata. Capite convexo, margine thoracis anteriore haud latiore, fronte satis lata, ad anticem paulo attenuata, lateribus paulo sinuatis ac concavis; fronte alutaceo, subtiliter transverse striato, medio longitudinaliter impresso. Vertice impresso, longitudinaliter minutissime striato. Antennis obscuris, ab articulo quarto (incl.) dentatis. Prothorace longitudine  $1\frac{1}{2}$  latiore, prope medium latissimo, dein ad angulos anticos ac ad basim leviter rotundato. Carina prae-humerali longa, parum convexa, cum carina marginali in medio longitudinis conjuncta, carina laterali fere recta, antice paulo declivi, carina submarginali cum ea antice divergente, in angulo basali conjuncta. Depressione transversa ante basim, impressione minore in angulis anticis thoracis. Rugis transversalibus, paulo recurvis. Lobo gulari integro, rotundato. Scutello transverso, carinato. Elytris longioribus, dorso subplanis, pone medium subdilatis, dein fortiter attenuatis, apicibus singulariter rotundatis ac minutissime denticulatis; elytrorum superficie minute transverse granulosi, pilositate uniformi ac densa. Subtus convexus, nitidulus, abdomine minutissime punctato, curte sparse regulariterque albido piloso. Segmento anali

emarginato. Pygidio integro. Tarsorum posteriorum articulo primo longitudine tres sequentes adaequante. Unguiculis simpliciter fissis, dentibus internis non convergentibus.

Patria: Borneo, Sandakan (*Baker*). Long. 4.5 mm.

Æneous; prothorax and head violaceous; front laterally and in anterior part more æneous. Upper surface rather feebly shining. Form elongate, elytra subdepressed on back. Front rather large, a little convergent anteriorly, shagreened, with very fine transverse sculpture, preoral part pilose. Antennæ obscure and dentate from fourth joint. Gular lobe entire, not emarginate. Prosternum  $1\frac{1}{2}$  times as broad as long, the greatest width in the middle, laterally feebly rounded. Sculpture composed of fine, transverse, arcuate striæ, the intervals finely punctate. Scutellum transversely carinate. Elytra equal, rather depressed on back, the greatest width behind the middle and then attenuate to apices which are separately, narrowly rounded and finely denticulate; the elytra leave uncovered narrow margins of abdomen. Entire surface of elytra clothed with a very fine, regular, white pubescence, behind the middle interrupted in the form of a transverse fascia. Abdomen very finely punctured and clothed with short white pubescence. Last ventral segment largely emarginate. Claws simply cleft, the lower portion not turned inward.

Type in the Baker collection.

*Agrilus microtatus* sp. nov. Plate 3, fig. 12; Plate 4, fig. 5.

Æneus, thorace olivaceo, lateribus viridibus; fronte smaragdinea. Elongatulus, subobesus, cylindricus, convexus. Capite convexo, lato, margine thoracis anteriore paululo latiore, fronte lata, parum convexa, smaragdinea, dense granulose transverse rugoso, pube brevissima albida sparsa, vertice obscurato, obscure æneo, impresso, longitudinaliter striato, antennis viridibus, ab articulo quarto (incl.) dentatis, curtis. Thorace convexo, longitudine  $1\frac{1}{2}$  latiore, transverse fortiter rugoso. Thorace in parte anteriori tertia latissimo, dein ad basim brevissime subsinuato. Carinis præhumeralibus, desuper obscuratis, convergentibus; carinis his curtis, ab carina laterali utraque valde divergentibus. Carina submarginali ante basim cum carina laterali conjuncta, dein ad apicem paulo divergente. Lobo gulari emarginato. Scutello transverse carinato. Elytris convexis, subrobustis, pone medium paululo dilatatis, dein ad apices modeste attenuatis, his separatim subangulosis, superficie haud dense transverse squamulosa, nitida, pube obscura tecta; solum

secundum suturam fascia lata pilorum albidorum ornata; hac pubescencia illa obscura haud densiore et pone medium atque ante apice transverse interrupta. Abdomen nitens, fere glabrum, ultimum abdominis segmentum apice curte sed profunde circulariter emarginatum. Tarsis curtis, unguiculis simpliciter dentatis.

Patria: Borneo, Sandakan (*Baker*). Long. 3.1 mm.

Æneous; prothorax more brassy green, sides greenish. Front bright green, head convex, very slightly broader than anterior margin of prothorax. Vertex feebly convex, very densely granulate and transversely rugose, with short, sparse, silky pubescence. Antennæ green, dentate from fourth joint. Prothorax 1.5 times wider than long, the greatest width in anterior third part, then very feebly sinuate to base. The two strong, short prehumeral carinæ, seen from above, anteriorly convergent. Sculpture of prothorax relatively strong, consisting of transverse striation. Gular lobe distinctly emarginate. Scutellum transversely carinate. Elytra robust, convex, æneous, shining, very slightly broadened behind the middle, then moderately attenuate to apices which are separately rounded and subangulate at tip; the rounded obtuse tip situated near suture. Entire surface of elytra covered with fine, short, obscure pilosity; only along suture on each side is there a large fascia, composed of fine, silky, white hairs; this fascia twice interrupted behind the middle and on apex. Undersurface shining, with extremely fine sculpture, last ventral segment with short but deep semi-circular emargination at tip. Legs and tarsi short, claws simply cleft, lower portion not turned inward.

This species is very remarkable because of the size, form, and ornamentation of the elytra and the form of the last ventral segment. Type in the Baker collection.

*Agrilus operosus* sp. nov. Plate 2, fig. 29; Plate 4, fig. 19.

Speciei europeae *Agrilo derasofasciato* Ksw. similis. Capite convexo, fronte longitudinaliter impressa, antice virescente, alutacea, sine sculptura alia distincta, vertice cupreo, fortiter impresso, leviter longitudinaliter striato, antennis virescentibus, longioribus ab articulo quarto dentatis; thorace in parte octavo anteriori latissimo, dein ad basim sinuato, depressione oblique laterali ac impressione forti, lata, præbasali; cupreo, nitido. sculptura haud densa rugarum subtilium, carina præhumerali usque ad medium thoracis longitudinis distincta, hic cum carina laterali juncta, omnino ei maxime approximata, ad eum ea para-



*Ulla*, carina laterali brevissime sinuata, fere recta, carina submarginali antice divergente, in basi cum ea conjuncta. Scutello transversim carinato. Lobo gulari antice emarginato. Elytris longis, aeneis, nitidis, sculptura subtili rugarum transversalium; lateribus fere rectis, pone medium leviter dilatatis, dein ad apicem fortiter attenuatis ac apicibus separatim rotundatis ac minutissime denticulatis. Superficie elytrorum pube brevi albida aequali tecta, fascia praeapicali transversa interrupta, glabra; etiam in parte basali ac laterali elytrorum fere glabra. Pedibus aeneis, articulo tarsorum posteriorum primo tres sequentes longitudine adaequante. Unguiculis simpliciter dentatis. Abdomine convexo, aeneo, segmento anali apice emarginato.

Patria: Borneo, Kinabalu (coll. *Obenberger*). Long. 5 mm.

This species resembles some species of the group of the European *A. derasofasciatus* Ksw. and many other species of the Oriental fauna.

Head cupreous, convex, front golden, vertex shagreened, without other distinct sculpture, longitudinally impressed on the middle, the impression still more pronounced on vertex which is finely longitudinally striate. Thorax rather narrow, cupreous,  $1\frac{1}{2}$  times as broad as long, anterior margin strongly bisinuate, the greatest width in anterior eighth part; from this point thorax is rather narrowed and feebly sinuate to base. Prehumeral carina long, reaching to middle of lateral carina, nearly straight, extremely near to lateral carina anteriorly, and basally joined with it. Gular lobe distinctly emarginate. Scutellum transversely carinate. Elytra similar to *A. derasofasciatus*, æneous, shining, paler than prothorax which is more cupreous with darker preapical denudate fascia. Pygidium distinctly carinate, but the carina not lineately prolonged at tip (as for example in *A. pictithorax* sp. nov., or *A. albogaster* Deyrolle, which are of the same group). Last ventral segment emarginate at tip. Abdomen æneous, shining, finely sculptured, and pilose. Tarsi rather long, first joint of posterior tarsi as long as the three following together. Claws simply cleft, lower portion not turned inward.

In its group this species is very well distinguished by the long prehumeral carina, which is nearly parallel with the lateral carina.

*Agrilus singaporensis* sp. nov. Plate 3, figs. 1, 42.

Capite thoraceque smaragdineus elytris antice viridi-obscuris, dein obscurioribus, vitta postica subsuturali subsinuata ac lutea.

Capite lato, convexo, oculis paulo prominulis, fronte lata, lateribus subtilissime subsinuatis, fere glabra, transverse rugosa. Vertice rugoso, convexo, sine impressione media. Thorace latitudine  $1\frac{1}{2}$  latiori, lateribus subrotundatis, in medio latissimo, dein ad apicem et ad basim attenuatis. Thorace subtiliter transverse rugosis; carina praehumerali paullo distincta, curta, carina marginali leviter curvata, carina submarginali cum illa antice fere subparallela, postice, pone medium, convergente et in angulis basalibus conjuncta. Lobo gulari distincto rotundato. Scutello lato, carinato. Elytris convexis, pone medium subdilatatis, dein ad apicem attenuatis, hic rotundatis ac minutissime denticulatis; abdominis partibus lateralibus pone medium elytrorum largitudinem superantibus. Sculptura elytrorum subtilissima aequalique; pone medium vitta lutea subsuturali; haec vitta in quarta parte apicali suturae valde approximata est. Abdomine convexo, aequali, subtilissime punctato, ultimo segmento integro, apice rotundato. Tarsis curtis; tarsis posterioribus  $\frac{2}{3}$  tibiae posterioris attingentibus; articulo tarsorum posteriorum primo tres sequentes longitudine attingente.

Patria: Singapore (*Baker*). Long. 6 mm.

Convex, elongate. Head and prothorax bright green; elytra darker, without luster, and obscure toward apex. Head broad, eyes a little prominent laterally. Front large, glabrous, densely and transversely striate, without luster, and with parallel sides. Vertex convex, densely striate, without impression. Prothorax 1.5 times broader than long, the greatest width in the middle, subrotundate at sides. Prehumeral carina not pronounced; marginal and submarginal carinae very near together and nearly parallel in anterior middle. Gular lobe broadly rounded. Scutellum transversely carinate. The general form of elytra resembles *A. viridis* L., enlarged behind the middle, attenuate and separately rounded at apex, which is finely denticulate; without any discal impression; behind middle a subsinuate yellow sutural vitta; posteriorly more distant from suture; in last fourth nearer suture; surface not impressed. Undersurface convex, finely punctate, more shining; last ventral segment rounded at tip. Antennae brassy green, dentate from fourth joint; first joint of hind tarsi as long as the three following joints together. Claws cleft in such a manner that the lower portion is turned inward, nearly touching that of opposite side.

*Agrilus tardulus* sp. nov. Plate 2, fig. 31; Plate 4, fig. 21.

Obscure aeneus, viridimicans, elongatus, cylindricus, convexus, staturae ac colore *Agrili angustuli* Illiger europaei simillimus. Capite lata, virescenti, alutaceo, latitudine marginem thoracis anteriorem paulo superante, fronte lata, alutacea, lateribus paralleli, subtiliter transverse rugosa, antice albo pubescente, antennis viridi-aeneis, ab articulo quarto dentatis, satis curtis. Thorace longitudine  $1\frac{1}{2}$  latiore, lateribus modice rotundatis, latitudine maxima in medio; margine antico modice bisinuato, sculptura satis densa ac satis forte rugarum transversalium; carina praehumerali longa, modice convexa, antice in medio longitudinis cum illa laterali juncta; hac carina fere recta, carina submarginali antice divergente, baseos iam ante basim cum carina laterali juncta. Gulari lobo distincte emarginato. Elytris longiusculis, pone medium leviter dilatatis, dein ad apicem attenuatis ac ibi separatim, satis late rotundatis ac minute denticulatis; elytrorum superficie tota pube brevi, sparsa, albida, regulari ac aequali tecta; solum lateraliter in parte anteriori hac pubescentia minus distincta. Scutello transversim carinato. Abdomine convexo, apice segmentis anali rotundato, nitido, obscure viridi-aeneo, fere glabro. Femoribus viridiscentibus, tarsorum posticorum articulo primo duo sequentes longitudine adaequante. Unguiculis simpliciter dentatis.

Patria: Sulu Islands (coll. *Obenberger*). Long. 4.5 mm.

This species resembles very much some European species.

Color and form nearly as in *A. angustulus* Illiger, pubescence of elytra nearly as in *A. olivicolor* Illiger. Dark æneous, rather shining, with greenish luster. Elongate, cylindrical, convex; head broad, a little broader than anterior margin of prothorax. Front greenish, shagreened, transversely and finely rugose. Vertex feebly impressed and longitudinally, densely striate. Sides of front parallel. Antennæ greenish, æneous, dentate from fourth joint. Prothorax nearly 1.5 times as broad as long, the greatest width in the middle, moderately rounded on sides, glabrous, with rather strong transverse sculpture. Prehumeral carina long, rather convex, feebly sinuate anteriorly, where it is joined to lateral carina nearly in the middle of the length of lateral carina. Gular lobe distinctly emarginate. Elytra moderately dilated behind middle, then narrowed to end, where they are separately rounded and minutely denticulate. Entire surface

covered with very fine, very short, equal, silky, white pubescence; this pilosity is only less distinct anteriorly on sides. Abdomen dark æneous, shining, very finely sculptured; last ventral segment rounded at tip. Legs greenish, bronzy; first joint of posterior tarsi as long as the next two together. Claws simply cleft, lower portion not turned inward.

*Agrilus pilipennis* sp. nov. Plate 3, fig. 4; Plate 4, fig. 1.

Bronceus, nitidulus, elongatus. Capite subconvexo, lato, oculis lateraliter haud prominentibus, fronte lata, cuprea, haud convexa, marginibus subparallelis, levissime subsinuatis, alutacea, rugis aliquot circularibus indistincte indicatis, antice aureola, pilis nonnullis aureis. Vertice impresso, subtilissime longitudinaliter striato. Antennis aeneo-viridibus, ab articulo quarto (incl.) dentatis. Prothorace longitudine  $1\frac{1}{2}$  latiore, margine antico modice bisinuato, latitudinem maximam in quinta parte anteriore attingente, dein ad basim fere recta attenuato, angulis posticis fere rectis. Sculptura striarum transversalium subtilium; harum intervallis alutaceis ac minutissime sparsim punctatis. Carina praehumerali convexa, forti curtaque; carina laterali fere recta, carina submarginali cum ea antice valde divergente, baseos conjuncta. Lobo gulari emarginato. Elytris longis, pone medium levissime dilatatis ac ibi abdominis partem lateriorem haut obtectantibus, dein ad apices modeste attenuatis; apicibus singulatim anguste rotundatis ac minutissime denticulatis, carina humerali recta usque ad tertiam partem anteriorem distincta. Elytrorum sculptura squamiformi transversa minutissima; superficie tota densissime aequaliterque pube brevi aurea tecta; haec pubes solum lateribus exterioribus, parum obscuratis haud distincta est. Subtus convexus, nitidus, abdomine minutissime punctato ac pube brevissima albida aequaliter tecto. Abdominis segmento ultimo truncato. Tarsis curtis; tarsorum posticorum articulo primo longitudine tres sequentes adaequante. Unguiculis simpliciter dentatis.

Patria: Borneo, Sandakan (*Baker*). Long. 5 mm.

This species resembles in general form *A. roscidus* Ksw. of Europe.

Small, elongate, æneous; head broad, but not broader than anterior margin of prothorax; front relatively broad, sides nearly parallel, very feebly sinuate; the middle of front nearly without sculpture, being very distinctly shagreened with some very feebly indicated circular striæ on sides. Anterior part of head more golden, with golden pilosity. Vertex impressed longitudinally



and finely longitudinally striate. Thorax  $1\frac{1}{2}$  times broader than long, the greatest width in anterior fifth part, then to base nearly straightly narrowed, with rectangular basal angles. Sculpture consisting of fine, transverse, not very dense striation; the intervals between striæ very distinctly shagreened, and sparsely, very finely punctured. Gular lobe emarginate. Scutellum transversely carinate. Elytra elongate, parallel to behind the middle, where they are moderately broadened; lateral margins of first abdominal tergite exposed; elytral apices finely denticulate and narrowly rotundate. From humeri passes a distinct straight carina to anterior third. Sculpture of elytra very fine, entire surface with exception of extreme lateral margins, which are a little obscure, covered with fine, golden, short, equal pubescence. Abdomen convex, shining, with very fine sculpture and with very short, regular, white pilosity. Last ventral segment truncate. Tarsi short; first joint of posterior tarsi as long as the three following together. Claws simply cleft, lower portion not turned inward.

The single type, taken at Sandakan, is in the Baker collection.

*Agrilus uniformipubis* sp. nov. Plate 3, fig. 5; Plate 4, fig. 2.

Species parva affinitatis *Agrili moultonis* Kerremans. Cupreo-violaceus, elytris violaceis, parum nitens, subtus nitidior, cupreus. Parvus, subelongatus, capite lato, viridi, dense transversim granulose-rugoso, vertice cupreo, levissime canaliculato, dense longitudinaliter striato. Frontis lateribus sinuatis, fronte lata. Antennis viridibus, ab articulo quarto dentatis. Gulari lobo leviter, curte emarginato. Prothorace lato, transverso, longitudine fere  $1\frac{3}{4}$  latiore, lateribus in quinta parte anteriori latitudinem maximam attingentibus, dein ad basim modice sinuatis. Disco subtiliter transversim, haud dense striato, impressione transversa lata praebasali ac alia in utroque angulo antico. Carina praehumerali longa, prolongata, tertiam partem anteriorem longitudinis attingente, convexa, in parte anteriori carinae laterali valde approximata ac cum ea conjuncta. Carina laterali fere recta, carina submarginali antice valde divergente. Dein ante basim subito approximata ac in basi cum illa laterali juncta. Scutello transversim carinato. Elytris aequalibus, dorsa subplanis, pone medium dilatatis, dein ad apicem attenuatis ac ibi separatim rotundatis ac denticulatis. Sculptura elytrorum granulosa ac minutissima, densissima. Superficie elytrorum tota pube brevi, albida, curta ac densa tecta. Pedibus cupreis, femoribus mediis virescentibus, tarsorum posteriorum articulo

primo tres sequentes longitudine adaequante. Abdomine convexo, aequaliter albide piloso. Partibus lateralibus pro-, meso-, ac metasterni densius albide pubescentibus. Segmento anali apice integro, rotundato. Unguiculis simpliciter dentatis.

Patria: Sandakan, Borneo (*Baker*). Long. 5.5 mm.

This species resembles very much some specimens of *Agrilus roscidus* Ksw.

Elongate, rather robust, and depressed. Head wide, but not broader than anterior margin of prothorax. Front broad, green, plane, laterally sinuate; very densely transversely rugose. Vertex very feebly impressed on the middle, very densely longitudinally striate, and cupreous. Antennæ rather long, green, dentate from fourth joint. Prothorax broad, the greatest width in anterior fifth part, then moderately sinuate to base; with very large, not deep, but very distinct transverse depression before base; an oblique impression on each side in anterior angles. Prehumeral carina very long, entire, sinuate, anteriorly very near to lateral carina and in anterior third part joined with it. Scutellum transversely carinate. Gular lobe very shortly and not distinctly emarginate. Elytra rather long, rather depressed on back, laterally feebly sinuate and nearly parallel, moderately dilated behind middle and narrowed to apices, which are separately rounded and finely denticulate. Without humeral carina, the lateral parts of abdomen near the middle not entirely covered by elytra. Elytral sculpture a very dense and extremely fine granulation; entire surface covered with short, dense, equal, white, fine pubescence. Abdomen more shining, convex, left ventral segment entire. Tarsi rather short, legs cupreous, only the middle femora greenish. First joint of hind tarsi as long as the three following together. Claws simply cleft, lower portion not turned inward.

*Agrilus pilistoma* sp. nov. Plate 2, fig. 10; Plate 3, fig. 26.

Obscure nigro-aeneus, metallicus, capite coerulescente, thorace obscure cupreo-aeneo. Capite convexo, marginis thoracis anterioris vix latiore; fronte alutacea, coerulescente, impunctata, glabra; parte praeorali albido pilosa. Antennis obscuris, ab articulo quarto (incl.) denticulatis. Thorace longitudine paulo latiore, margine antico bisinuato, lobo medio modice producto; sculptura rugarum transversalium subtilium ac regularium; depressione modesta in angulis anticis. Carina praehumerali longa, parum convexa, cum carina laterali prope medium longi-

tudinis conjuncta. Carina laterali recta, carina submarginali baseos cum carina laterali conjuncta, antice modice divergente. Lobo gulari emarginato. Scutello transverse carinato. Elytris convexiusculis, elongatis, pone medium paulo dilatatis, dein ad apicem attenuatis et ibi separatim rotundatis ac minute punctulatis. Sculptura elytrorum minuta ac aspera, rugas transversales indistinctas efficiente. Tota elytrorum superficie pube brevi, densa, aequali, fulva ornata; haec pubescentia solum ad partes laterales, secundum margines minus distincta est; ibi pili curtissimi obscuri observantur. Abdomine ac corpore subtus nitidiore, aeneo. Abdomine convexo, minute sparse punctato pube sparsa curtissimaque; ultimo abdominis segmento integro, rotundato. Tarsorum posticorum articulo primo sequentes tres longitudine superante. Unguiculis simpliciter fissis, partibus interioribus unguiculorum non convergentibus.

Patria: Sulu Islands (coll. *Obenberger*). Long. 5 mm. (♂).

Elongate; very dark æneous. Head shagreened, without other sculpture, glabrous; preoral part of front covered with fine white pubescence. Front relatively broad, lateral margin anteriorly feebly convergent. Eyes laterally not prominent. Prothorax relatively long, being only a little broader than long, anterior margin bisinuate; median lobe moderately advanced toward head. Thorax sinuate, and moderately attenuate to base, the greatest width in anterior third. Sculpture regular and relatively fine. Gular lobe distinctly emarginate. Scutellum transversely carinate. Elytra long, a little enlarged behind middle, then attenuate to apex, where they are separately rounded and finely denticulate; entire surface covered with fine, regular, short, yellowish pubescence; this is indistinct only along sides in a small longitudinal space, being replaced here by similar but shorter and very obscure pilosity. Pygidium without carina. Abdomen convex, finely and sparsely punctured, and with short, sparse, white pubescence, more shining than upper surface, æneous. Last ventral segment rounded at tip. First joint of posterior tarsi as long as the three following joints together. Claws simply cleft, lower portion not inverted.

*Agilus manilensis* Fisher. Plate 2, fig. 21; Plate 4, fig. 10.

In the species sent to me from the Baker collection were two (female and male) specimens of this species coming from Basilan Island.

*Agrilus luctuosellus* sp. nov. Plate 2, fig 8; Plate 3, fig. 24.

Cupreo-aeneus, thorace ac capite cupreis, subtus obscure aeneus. Capite convexo, margine anteriore thoracis non latiore. Fronte lata, lateribus subparallelis, transverse subtiliter striata. Antennis obscure aeneis, ab articulo quarto (incl.) dentatis. Vertice longitudinaliter impresso. Thorace longitudine  $1\frac{1}{2}$  latiore, margine antico bisinuato, lobo medio producto, latitudinem maximam in parte tertia anteriori attingente, dein ad basim fortices quam ad angulos antices, leviter sinuato-atte- nuato. Rugis transversalibus subtilibus, regularibus. Carina praehumerali distincta, paulo convexa, in longitudinis dimidio cum carina laterali conjuncta. Carina laterali fere recta, carina submarginali in angulis posticis cum c. laterali conjuncta, dein cum illa paullo divergente, antice fere subparallela. Lobo gulari integro, rotundato. Scutello transverso, carinato. Elytris pone medium paullo dilatatis convexis, dorso subdeplanatis, ad apicem attenuatis, hic separatim rotundatis ac minute denticulatis. Superficie elytrorum pube brevi albida aequali tectis, hac pube pone medium fascia tenui transversa denudata. Sculptura elytrorum densa minutaque. Subtus convexus, metallicus, fere impunctatus; pube sparsa curta albida. Segmentum anale apice subtruncatum, non emarginatum. Unguiculi?

Patria: Sulu Islands (coll. *Obenberger*). Long. 4.5 mm.

Small, elongate; coppery aeneous with darker prothorax and head. Head convex, but not broader than anterior margin of prothorax, front relatively broad and parallel, with linear impressed inner margins of eyes in the form of a narrowed channel, very finely transversely striate, surface shagreened. Prothorax  $1\frac{1}{2}$  times broader than long, anterior margin bisinuate; median lobe extended. Sides of prothorax from anterior third part attenuate and feebly sinuate to base; hind angles acute. Sculpture of prothorax regular and fine, not very close. Gular lobe entire, rounded. Elytra elongate, a little enlarged behind middle, then attenuate to apices which are separately rounded and finely denticulate. The lateral parts of first abdominal segment are visible from above as they are not entirely covered by elytra. Sculpture of elytra fine and dense, consisting of transverse rugae; surface entirely covered with fine, short, white, regular pilosity, this pubescence behind the middle interrupted by a transverse, narrow fascia which is without white hairs, only with short, obscure, sparse hairs. Undersurface darker but more shining, abdomen convex, nearly without punctuation, with short, sparse



pilosity. Last ventral segment broadly truncate, not emarginate.

My single specimen is defective and I could not see the form of the claws, but from the indicated characters it is new and different from all similar species of the Malayan fauna.

*Agrilus ludicator* sp. nov. Plate 2, fig. 32; Plate 4, fig. 22.

Elongatus, subcylindricus, convexus, obscure viridi-aeneus, nitens. Capite glabro, lato, thoracis marginis anterioris paulo latiore, lateraliter modeste proeminente; fronte lata, subplana, transverse rugosa, lateribus fere rectis, antice at ad latera pube tenuissima albida ornato. Vertice subtiliter impresso, longitudinaliter striato. Thorace longitudine fere  $1\frac{1}{2}$  latiore. antice bisinuato, lateribus satis fortiter rotundatis, latitudine maxima in medio, depressione minuta circulari ante scutellum, unaque obliqua in utroque angulo anteriore; superficie glabra, nitida, rugatione transversa, satis forti. Carina praehumerali parum convexa, antice sinuata, usque ad medium carinae lateralis distincta ibique cum ea juncta. Carina submarginali antice divergente, postice iam in tertia parte basali longitudinis cum illa laterali juncta. Gulari lobo parum producto, subtruncato. Scutello transversim carinato; elytris convexis, pone medium dilatatis, dein ad apicem attenuatis ac separatim rotundatis, minute denticulatis, sculptura satis forti transversa, rugosa; superficie glabra, solum secundum suturam in parte apicali fascia longitudinali (haud impressa!) pilorum sparsorum ac curtissimorum, albidorum, parum distincta. Abdomine, pedibus, antennisque aeneis; antennis ab articulo quarto dentatis, curtis, tenuibus, pedibus satis longis, tarsis curtis, tarsorum posticorum articulo primo tres sequentes longitudine adaequante. Unguiculis simpliciter dentatis. Segmento anali apice rotundato ac paululo acuminato.

Patria: Sulu Islands (coll. Obenberger). Long. 4 mm.

This species resembles *A. olivicolor* Illiger, of Europe, in color.

Convex, cylindrical, dark æneous, with greenish luster, rather shining. Head convex, a little broader than anterior margin of prothorax. Front broad, rather plane, with transverse rugosities; margins of front nearly parallel and straight. Vertex feebly impressed, longitudinally striate. Prothorax 1.5 times as broad as long, the greatest width in the middle, with rather strongly rounded sides; sculpture transverse, glabrous, rather strong, shining. A small rounded impression before scutellum

and on each side an oblique impression within anterior margin of prothorax. Prehumeral carina long, not very convex, rather near to lateral carina and joined to it in the middle, where it is a little sinuate. Gular lobe feebly extended, nearly truncate. Scutellum transversely carinate. Elytra rather convex, shining, rather strongly transversely rugose, nearly glabrous, only along suture with a rather large but very indistinct longitudinal fascia composed of extremely short, silky, white, sparse hairs, this fascia distinct only in apical part; in basal third part it is indistinct. Elytra dilated behind middle and then attenuate to apex, which is separately broadly rounded and dentate. Abdomen rather convex, shining; last ventral segment rounded and a little acuminate at tip. Antennæ, legs, and underside bronzy with green luster, tarsi obscure, first joint of posterior tarsi as long as the three following together. Claws simply cleft, lower portion not turned inward.

*Agrilus carinipennis* sp. nov. Plate 3, fig. 7; Plate 4, fig. 11.

Affinitatis *A. sepulchralis* H. Deyrolle.

Niger, nitidus, pedibus viridibus, fronte cyaneo-viridi, elytris dorso subplanis, carinatis. Capite alutaceo, convexo, fronte tenui, lateribus parallelis, in medio impunctata, antice transverse dense striata ac pilis aureis ornata, vertice impresso, longitudinaliter subtiliter striato, antennis viridi-aeneis, ab articulo quarto dentatis. Thorace longitudine  $1\frac{1}{3}$  latiore, lateribus parallelis, carina praehumerali curta, forti, carina laterali fere recta, carina submarginali leviter sinuata ac cum illa in angulis basalibus conjuncta. Depressione rotundata antescutellari, atque impressione obliqua in angulis anticis. Sculptura transversa subtiliore; disco obscure, vix distincte pubescente. Lobo gulari integro, rotundato. Scutello transverse carinato. Elytris curtis, usque pone medium subparallelis, dein ad apicem modice attenuatis; apicibus separatim rotundatis ac minutissime denticulatis. Carina humerali recta usque ad  $\frac{2}{5}$  longitudinis distincta. Superficie obscure pubescente; solum in medio fascia pilorum alborum lata transversa atque apicibus similiter ornatis. Abdomen nigrum, nitidum; segmentum abdominis ultimum minute sparse granulatum ac integrum. Tarsis curtis, articulo tarsorum posticorum primo longitudine sequentes tres adaequante. Unguiculis simpliciter dentatis.

♂ : Granulis duo approximatis segmentis primi basi.

Patria: Singapore (*Baker*). Long. 4 mm.

Black; rather robust. Head bluish green, shagreened; front laterally parallel; anteriorly covered with fine golden pilosity; vertex impressed and longitudinally striate. Prothorax with nearly parallel sides, black, covered with indistinct, obscure pilosity; with feeble circular depression before scutellum and with oblique impression on base. Sculpture rather fine. Gular lobe rotundate, entire. Elytra black, with fine sculpture, parallel on sides as far as to behind middle, and then narrowed to apex; this is separately rotundate and very feebly denticulate. Elytra, between the two humeral carinæ, subplanate, a little depressed; entire surface covered with obscure, not very distinct pilosity; behind middle occurs a large transverse fascia of white pubescence; apices also clothed with pilosity. Humeral carina of elytra sharp and straight, reaching to two-fifths of elytral length. Abdomen black, with a very fine sculpturation, metallic, with sparse and extremely fine, short, white pubescence. Legs green; tarsi short; first joint of hind tarsi as long as the three following together. Last ventral segment truncate, and with sparse, fine granulation. Claws simply cleft, lower portion not turned inward.

*Male*.—With two approximate granule on base of first abdominal segment. Very distinct because of sculpture and color. The single type is in the Baker collection.

*Agilus persolitarius* sp. nov. Plate 3, fig. 11; Plate 4, fig. 4.

Capite coeruleo, vertice nigro, thorace nigro, lateribus viridimicante, elytris nigris, dense aureopilosis, subtus obscureaeneus, micans. Capite convexo, fronte lata, convexa, grosse punctata, antice aureopilosa, pilis longioribus; vertice nigro, impresso. Antennis viridicoeruleis, curtis, ab articulo quarto (incl.) dentatis. Prothorace longitudine  $1\frac{1}{2}$  latiore, in medio longitudinalis latitudinem maximam attingente, lateribus levissime rotundatis, fere rectis; depressione transversa praebasali; carina praehumerali curta; carina marginali fere recta levissime sinuata, carina submarginali cum ea subparallela ac valde approximata, in angulis posticis cum ea conjuncta. Sculptura rugarum transversalium subtili, micante. Lobo gulari integro, rotundato. Scutello transverse carinato. Elytris curtis, dorso deplanatis, usque pone medium subparallelis, ibi paullo subdilatatis, dein ad apices modice attenuatis, apicibus separatim rotundatim ac minutissime denticulatis; lateraliter carina elytrali humerali longa ac recta ornatis; haec carina usque ante medium

distincta est et ibi fere marginem lateralem attingit. Elytrorum superficie pube aurea densa aequali tecta; haec pubes pilis longioribus composita est. In parte apicali tertia pubescentia haec macula parva transversali ovali obscura interrupta est. Sculptura elytrorum minuta, granulosa, transversali. Abdomine convexo, nitido, minutissime punctato, segmento anali apice emarginato. Tarsorum posticorum articulus primus longitudine sequentes duo adaequat. Unguiculis simplice dentatis.

Patria: Singapore (*Baker*). Long. 3.2 mm.

A small, short, dark species. Head blue, vertex blackish. Sculpture of head rough; anterior half of head covered with long yellow pubescence. Vertex longitudinally impressed. Antennae bluish green, dentate from fourth joint. Prothorax 1.5 times wider than long, the greatest width in the middle, on sides very feebly rounded, nearly straight. Prothorax shining, black; only sides with bluish or greenish luster. Gular lobe rounded and entire. Scutellum transversely carinate. Elytra short and relatively broad, laterally subparallel as far as to behind middle, then very little enlarged and moderately attenuate to apex; apices separately rounded and very finely denticulate. Disk of elytra plane; laterally with a very sharp, straight humeral carina which is long, reaching nearly to middle and here very near to lateral margin, but not joined to it. Sculpture of elytra fine; entire surface covered with a yellow equal pubescence which consists of rather long fine hairs; this pubescence is interrupted in apical third by a small transverse denudate macula, which is covered with dark, obscure, short pilosity. Abdomen convex, finely punctured, with fine white pubescence. Last ventral segment emarginate at tip. First joint of posterior tarsi as long as the three following together. Claws simply cleft, lower portion not inverted.

This species is very remarkable in consequence of the color, clear golden pilosity of the upper surface, the long elytral carina, etc. Type in the Baker collection.

*Agrilus carinellifer* sp. nov. Plate 2, fig. 35; Plate 4, fig. 25.

Parvus, aeneus, elongatulus, elytris dorso subdeplanatis. Capite convexusculo, margine thoracis anteriore haud latiore; fronte subparallela, angusta, antice luteo pilosa, alutacea, sine rugis transversalibus. Vertice longitudinaliter impresso, subtilissime longitudinaliter striato. Oculis lateraliter haud prominulis. Thorace longitudine  $1\frac{1}{2}$  latiore, convexo, antice bisinuato,



lobo medio modice producto, sculptura rugorum transversalium haud densarum ac subtilium. Lateribus paulo subrotundatis, ad basim modice sinuatis, latitudine prope medium maxima. Carina præhumerali curta, recta, cum illa laterali divergente; carina laterali recta, carina submarginali cum illa antice valde convergente, baseos conjuncta, recta. Lobo gulari late rotundato, integro. Scutello transverse carinato. Elytris dorso subdeplanatis, pone medium paulo dilatatis, dein ad apices modice attenuatis, ibique separatim rotundatis ac denticulatis. Elytris carina humerali, desuper visibili recta, usque pone tertiam anteriorem partem distincta ornatis. Sculptura elytrorum squamiformi haut densa, rugas transversales irregulares efficiente. Superficie elytrorum tota pube aequali sparsa albida vel lutescente tecta; solum pone medium spatio rotundo; minore, suturali, transverso, denudato. Subtus aeneus, nitidus; segmento anali apice curte sed profunde angulatim emarginato. Tarsis longioribus; tarsorum posteriorum articulo primo tres sequentes longitudine adaequante. Unguiculis simpliciter fissis.

Patria: Basilan Island (*Baker*). Long. 3.2 mm.

Small, æneous, elongate species. Surface æneous, moderately shining; head golden (female) or bluish green (male). Head convex, but not broader than anterior margin of prothorax. Front shagreened, without any puncturation or rugosity; anteriorly with yellow pilosity; laterally nearly parallel; vertex very finely, longitudinally striate, and impressed in middle; antennæ greenish, serrate from fourth joint. Prothorax 1.5 times as broad as long, with fine and rather sparse transverse rugosities; greatest width near the middle; sides feebly rotundate and attenuate to base and to apex. Gular lobe very convex and prominent but entire, without emargination. Scutellum transversely carinate. Elytra rather broad elongate, subdepressed on back between the humeral carinæ which are visible from above and parallel, reaching behind anterior third and very sharp and straight. Elytra subparallel to behind middle, then moderately and straightly attenuate to apices, which are separately rounded and denticulate. Sculpture consists of rather sparse, squamiform, transverse rugosity. Entire surface clothed with fine, silky, white pubescence; only behind middle a little oval transverse space is hairless. Undersurface finely punctured and moderately convex; last ventral segment shortly but very deeply angulately emarginate. Tarsi relatively long, first joint of

hind tarsi as long as the three following together. Claws simply cleft, lower portion not turned inward.

*Male*.—Head green, middle of prosternum covered with fine, dense, erect, white pilosity.

*Agrilus pulcher* E. Saunders.

In Fisher's paper<sup>8</sup> this species is cited in the key and in the annotations as being described by Deyrolle. In reality E. Saunders is the author who described the species in 1874.<sup>9</sup>

*Agrilus pterochlorus* sp. nov. Plate 2, fig. 27; Plate 3, fig. 16.

Aeneus, aureomicans, elongatus, convexus. Capite convexo, fronte lateribus subparallelis, in medio alutacea, minute punctata, antice pube aureola. Vertice impresso subtiliter longitudinaliter striato. Antennis longis, thoracis basim attingentibus, aeneis, ab articulo quarto (incl.) dentatis. Thorace lateribus fere subparallelis, longitudine  $1\frac{1}{2}$  latiore, depressione subtili antescutellari, impressione in utroque angulo antico; sculptura striarum transversarum subtili, striarum intervallis punctis densis minutissimis longitudinalibus ornatis. Carina humerali convexa, longa, antice fere in dimidio longitudinis cum carina laterali conjuncta. Carina laterali fere recta, carina submarginali ab ea antice valde divergente, postice in angulis basalibus cum ea conjuncta. Lobo gulari antice levissime truncato-emarginato. Scutello transverse carinato. Elytris elongatis, aequalibus, carina humerali recta, usque ad tertiam partem anteriorem distincta, convexis, pone medium paulo dilatatis, dein ad apices singulatim modice attenuatis ibique minutissime denticulatis; sculptura rugarum squamiformium transversalium subtilium, quorum intervalla sicut in thorace punctis longiusculis minimis aequalibus ac haud densis repleta sunt. Superficie tota pube curta albida aequali ornata. Subtus aeneus, abdomine convexo, minutissime punctato, pube brevissima albida. Abdominis segmento ultimo apice late, haud profunde emarginato. Pedibus aeneis, tarsis longis, tarsorum posteriorum articulo primo sequentes tres longitudine attingente. Unguiculis simpliciter dentatis.

Patria; Sulu Islands (coll. *Obenberger*). Long. 4.7 mm.

This species is characterized by the fine sculpture of the upper surface and the presence of a relatively short, humeral carina.

<sup>8</sup> Philip. Journ. Sci. 18 (1921) 358, 397.

<sup>9</sup> Trans. Ent. Soc. London (1874) 327.

Golden, bronzy, moderately shining. Head convex, rather broad. Front shagreened with very feeble puncturation; anterior part of front covered with very fine, dense, golden pilosity. Antennæ long, dentate from fourth joint, reaching to base of prothorax. Prothorax long, only  $1\frac{1}{2}$  times as broad as long, with nearly parallel sides, anteriorly moderately bisinuate, with very fine sculpture consisting of fine striæ, the intervals regularly covered with very fine puncturation. Prehumeral carina convex and long, joined near middle with the lateral carina and there a little sinuate. Gular lobe very feebly emarginate, nearly truncate. Elytra relatively long, feebly dilated behind middle and then regularly narrowed to apices, which are rounded and very finely denticulated; from the humeri passes a straight, narrow, acute, relatively short, humeral carina, reaching laterally to anterior third. Sculpture fine, squamuliform, and transverse. Entire surface covered with a very regular, fine, dense, white pilosity; extreme lateral parts feebly cupreous; sculpture finer at apices. Undersurface æneous, shining, abdomen convex, very finely, sparsely sinuate, with very short, sparse, white pubescence. Legs æneous, tarsi relatively long; first joint of posterior tarsi as long as the three following together. Claws simply dentate, lower portion not turned inward.

*Agrilus cannulus* sp. nov. Plate 2, fig. 2; Plate 3, fig. 18.

Obscure æneus, subtus obscure viridi-æneus, nitidior. Curtulus, dorso elytrorum paulo deplanato, convexus. Capite convexo, fronte ad verticem valde attenuata, tenui, antice pube albida ornata, rugosa. Vertice impresso, longitudinaliter striato. Antennis viridi-æneis, thoracis dimidium haud attingentibus, ab articulo quarto (incl.) dentatis. Prothorace longitudinis  $1\frac{1}{2}$  latiore, antice valde bisinuato, transversali, transverse haud fortiter striato, impressione rotunda antescutellari lata, impressione obliqua subtili in utroque angulo anteriore. Carina praehumerali curta, forti, fere recta, a carina marginali valde divergente. Carina marginali recta. Carina submarginali antice valde divergente, dein ad basim ad illam lateralem convergente ac iam ante angulis basalibus juncta. Lobo gulari late rotundato, integro. Lateribus fere rectis, solum antice paulo rotundato attenuatis. Scutello transverse carinato. Elytris curtis, robustis, lateraliter fere totum abdomen tegentibus, dense subtiliter granulosus, et superficie tota pube subtilissima grisea aequali tecta carina laterali recta ac curta humerali,

fere solum quintam vel sextam elytrorum longitudinis partem attingente; pone medium haud dilatatis, dein ad apices modeste rotundato-attenuatis ac conjunctim rotundatis. Abdomine nitidiore, segmento primo subtiliter transverse striato, segmento anali apice curte sed profunde emarginato. Femoribus omnibus in parte interiori ac apicali late emarginatis, hac emarginatione tertiam partem longitudinis femoris attingente. Tarsis curtis, tarsorum posteriorum articulo primo duo sequentes longitudine adaequante. Unguiculis simpliciter dentatis.

Patria: Mindanao, Dapitan (*Baker*). Long. 4-5.7 mm.

Short, robust, cylindric, with elytra dorsally feebly depressed. Dark bronzy, feebly shining; undersurface more lustrous. Head convex; front narrow, laterally very distinctly narrowed to vertex, with feebly arcuate sides, densely rugulose; anterior preoral part clothed with very dense, fine, white pubescence. Antennæ rather long, greenish metallic, dentate from fourth joint. Vertex impressed and with longitudinal striation. Thorax short and convex, with nearly parallel sides, which only at apex are feebly rotundate and narrowed. Sculpture fine and regular. A large but not deep circular impression before scutellum, and on each side an oblique depression. Elytra short, moderately depressed dorsally, laterally nearly parallel to behind middle, then feebly narrowed to apex, and there commonly rounded. Humeral carina straight, acute but very short, reaching only to basal fifth or sixth of elytra; sculpture very fine, granulose and dense; entire surface covered with fine, recumbent, short, gray pilosity. Abdomen more shining, last ventral segment on tip shortly but deeply, rugulosely emarginate. Femora in inner apical third laterally emarginate. Tarsi short, first joint of posterior tarsi as long as the next two together. Claws simply cleft, lower portion not turned inward.

This species is very remarkable in size, form of legs, elytra, front, etc.

*Agrilus exclusus* sp. nov. Plate 2, fig. 1; Plate 3, fig. 17.

Aeneus, nitidus, capite viridescente elytris obscure-aeneis, nitidis. Capite convexo, fronte alutacea, lateribus subparallelis, antice paululo sinuatim convergentibus, pube aurea splendida antice lateribusque anticis ornata; antennis viridescentibus, ab articulo quarto dentatis, satis curtis. Vertice profunde late impresso. Thorace longitudinis  $1\frac{1}{2}$  latiore, lateribus rectis, subconvexo, impressione antescutellari subtili, impressione obliqua



in utroque angulo anteriore. Sculptura thoracis subtili striarum transversalium; in striarum intervallis minute punctatus. Carina praehumerali longa convexa in longitudinis dimidio cum carina laterali conjuncta, carina laterali fere recta, antice leviter declivi, carina submarginali cum ea antice divergente, in angulis basalibus juncta. Elytris longioribus, pone medium paulo dilatatis, dein ad apicem modice attenuatis ac ibi rotundatis ac minutissime denticulatis. Sculptura rugarum transversalium minute punctulatarum, superficie tota pube aequali brevi aureola tecta. Carina humerali laterali recta usque ad quartam partem basalem distincta. Lobo gulari modice emarginato; ultimo abdominis segmento emarginato. Abdomine minutissime punctato ac brevissime sparse albo pubescente. Tarsis curtis, tarsorum posticorum articulo primo sequentes tres longitudine adaequante. Unguiculis simpliciter dentatis.

Patria: Mindanao, Dapitan; Basilan Island (*Baker*). Long. 3.8–4.2 mm.

Elongate, æneous, rather shining. Head convex, but not very broad, front elongate, very feebly attenuate anteriorly, nearly parallel-sided; anterior part covered with splendid golden pilosity. Antennæ greenish, rather short, dentate from fourth joint. Vertex deeply grooved and impressed on middle. Prothorax 1.5 times as wide as long, nearly straight and parallel on sides, with very fine striæ, the intervals covered with extremely fine puncturation. Gular lobe emarginate. Elytra long and rather attenuate, feebly depressed dorsally, with relatively short, straight humeral carina, reaching from humeri to first fourth. Sculpture of elytra fine, finer toward apex; behind middle elytra feebly dilated and then moderately narrowed to apices which are rounded and very feebly denticulate. Entire upper surface covered with short yellow pubescence. Abdomen convex, very finely punctured and covered with very fine, short, sparse, white hairs. Last ventral segment shallowly, widely emarginate at tip. Legs bronzy, short; first joint of posterior tarsi as long as the three following together. Claws simply cleft, lower portion not turned inward.

I have four specimens before me, three from Dapitan and one from Basilan Island. The specimen from Basilan has a more cupreous thorax, but it differs in no other particular from the other types.

This species is very well characterized by its short humeral carina, color, and form.

*Agrilus perniciosellus* sp. nov. Plate 2, fig. 6; Plate 3, fig. 22.

Elongatus, dorso subplanus, aeneus, capite obscuriore, thorace violaceo, lateribus aenescentibus. Capite satis convexo, fronte obscura, alutacea, sine sculptura alia, solum antice transverse subtiliter rugosa. Lateribus ad anticem paulo attenuatis. Antennis viridi-aeneis, ab articulo quarto dentatis, satis curtis. Vertice longitudinaliter impresso, alutaceo, subtilissime longitudinaliter striato. Thorace convexo, longitudine  $1\frac{1}{4}$  latiore, lateribus fere rectis, basi ad anticem paulo convergentibus; sculptura parum profunda, transversali. Carina prae humerali acuta, convexa, longa, ante medium cum carina laterali conjuncta. Carina laterali leviter sinuata. Carina submarginali cum illa basi juncta, ad anticem divergente. Gulari lobo integro, rotundato. Scutello transversim carinato. Elytris elongatis, dorso subdeplanatis, minutissime sculptis, pone medium paulo dilatatis, dein ad apicem fortiter attenuatis, apicibus attenuatis ac curte rotundatis, denticulatis. Carina humerali recta curtaque, usque ad elytrorum quintam partem anteriorem vel usque ante apicem coxarum posteriorum distincta. Superficie tota pube densissima, curta, minuta, subtilissima albosericea tecta. Pedibus viridi-aeneis. Tarsorum posticorum articulo primo tres sequentes longitudine adaequante. Unguiculis simpliciter dentatis. Abdomine aeneo, convexo, segmento anali apice truncato.

Patria: Malay Peninsula, Wellesley (coll. *Obenberger*). Long. 4.5 mm.

Rather elongate, with fine sculpture; head obscure, æneous, front moderately narrowed to apex, shagreened, without other sculpture; only preoral part transversely rugose. Vertex impressed, very finely longitudinally striate. Prothorax rather convex, with splendid violaceous color, only on sides more æneous; greatest width at base, then feebly narrowed to apex. Sculpture of prothorax very fine, transverse. Prehumeral carina long and convex, reaching to before middle of lateral carina and there joined to it; lateral carina feebly sinuate, nearly straight. Scutellum carinate. Gular lobe rounded, not emarginate. Elytra rather long, a little dilated behind middle, then strongly narrowed to apex which is narrowly rounded and finely denticulate. On back elytra are depressed, plane; sculpture very fine; entire surface covered with dense, very short, equal, very fine, silky, white pubescence. A straight, short humeral carina reaches basal fifth (or before the hind apical margin of hind coxæ). Last ventral segment truncate on apex. Legs

greenish, first joint of posterior tarsi as long as the following three together. Claws simply cleft, lower portion not turned inward.

This species belongs to the group of *A. perniciosus* H. Deyrolle, characterized by the small, equal size and the presence of a straight humeral carina on the elytra. In this group this species can be easily distinguished by its color, modification and shortness of humeral carina, very dense and equal pilosity above, etc.

*Agrilus lazar* sp. nov. Plate 3, fig. 6; Plate 4, fig. 12.

Parvus, elongatulus, subconvexus, obscuræ æneus; capite convexo, lato, margine thoracis anteriore paulo latiore, fronte lata, alutacea, ad anticem leviter attenuata, nigra, impunctata, vertice leviter impresso, minutissime sculpto. Antennis æneis, ab articulo quarto dentatis. Thorace lato, subconvexo, in dimidio latitudinem maximam attingente, lateribus rotundatis, margine antico bisinuato; disco obscurato, lateribus basi quæ laetius viridi-æneo, impressione profunda transversali lata ante basim atque depressione obliqua in utroque angulo antico. Sculptura minuta rugarum transversalium. Carina humerali parum convexa, antice cum illa laterali juncta; carina laterali recta, carina submarginali antice paulo divergente. Lobo gulari rotundato, integro. Elytris subtiliter sculptis, pube uniformi, aurea, curta, aequali; lateribus antice fere rectis, pone medium paululo dilatatis, dein ad apicem attenuatis, apicibus rotundatis ac minutissime denticulatis. Carina laterali recta, acuta humerali, usque ad  $\frac{2}{3}$  longitudinis elytrorum distincta. Segmento anali ultimo apice integro, rotundato. Tarsis obscuris, curtis, unguiculis simpliciter dentatis.

Patria: Singapore (*Baker*). Long. 3.2 mm.

Small, elongate, convex, dark æneous, with moderate luster. Head black, median part of prothorax obscure. Head convex. a little broader than anterior edge of prothorax, without distinct sculpture on front. Front shagreened, feebly narrowed anteriorly. Vertex feebly impressed, without distinct sculpture. Antennæ serrate from fourth joint. Prothorax rounded on sides, the greatest width in the middle, convex, with rather deep and broad transverse impression before base, and with an oblique depression in each anterior angle. Prehumeral carina very feebly convex, but entire and anteriorly joined to lateral carina. Scutellum transversely carinate. Gular lobe entire and rounded. Elytra dark, æneous, very feebly dilated

behind middle, and then narrowed moderately to apices, which are separately rounded, and very feebly denticulate at tip. Entire surface covered with fine, short, equal, uniform golden pubescence. The humeral carina is very well developed and reaches to 0.4 of length. Undersurface moderately convex, rather shining, last ventral segment rounded at tip. Tarsi short; claws simply cleft, lower portion not turned inward.

This species belongs in the group of *A. perniciosus* Deyrolle. A single specimen of this species is in the Baker collection.

*Agrilus optatus* sp. nov. Plate 2, fig. 36; Plate 4, fig. 26.

Affinitatis *Agrili iliganensis* Fisher.

Elongatus, convexus, capite nigro (♂) vel viridi-coeruleo (♀), thorace nigro, lateribus viridescentibus, elytris obscure aeneis, fere nigris, subtus obscure-aeneus, nitidus. Capite lato, margine thoracis anteriore latitudine non superante fronte subconvexa, lateribus leviter rotundatis, subcanaliculatis; rugis satis fortibus transversis. Vertice impresso, obscuro, longitudinaliter minute striato. Antennis obscure aeneis, ab articulo quarto dentatis. Prothorace longitudine  $1\frac{1}{2}$  latiore, latitudinem maximam in tertia parte anteriori attingente, dein ad basim leviter subsinuate attenuato; impressionibus levibus: una praescutellari circulari, una utrinque in angulo thoracis anteriore. Sculptura subtili striarum transversalium; intervallis striarum alutaceis. Carina humerali longa, convexa, antice leviter sinuata ac cum carina laterali in tertia parte anteriori conjuncta. Carina laterali fere recta, carina submarginali antice cum illa divergente, baseos conjuncta. Gulari lobo levissime sinuato-emarginato. Scutello transverse carinato. Elytris longis, nigris, dorso modice deplanatis, carina humerali usque ad tertiam superficiem tota pube brevi aequali aurea ornatis; solum lateribus pone medium modice dilatatis, dein ad apicem modice attenuatis ac separatim rotundatis, apicibus subtilissime denticulatis. Sculptura elytrorum subtili, squamiformi transversa; superficie tota pube brevi aequali aurea ornatis; solum lateribus extremis obscuratis ac pube curta obscura indistincta tectis. Abdominis segmento ultimo apice truncato; tarsis curtis, unguiculis simpliciter dentatis.

Patria: Mindanao, Dapitan (*Baker*). Long. 4.2–5 mm.

Dark æneous; head black (male) or greenish blue (female); prothorax black, laterally with slight greenish luster, elytra dark æneous, nearly black, moderately shining. Head rather



large, front rather strongly transversely striate; vertex impressed on middle, longitudinally striate. Antennæ serrate from fourth joint, dark æneous. Prothorax convex, 1.5 times broader than long, the greatest width in anterior third part, then very feebly sinuate, and narrowed to base; with a small circular depression before scutellum, and on each side with an oblique impression in the anterior angles. Gular lobe very feebly sinuate-emarginate. Scutellum transversely carinate. Elytra long, laterally very feebly sinuate, nearly parallel, the greatest width behind the middle; lateral parts of first abdominal segment above not entirely covered. Apex of elytra rotundate and very feebly denticulate. A very distinct, sharp, straight humeral carina on sides which is distinct to behind anterior third. Sculpture of elytra fine, squamiform and transverse; entire surface covered with fine, short, equal golden pilosity; only the sides are more obscurely colored and with a short, not very conspicuous pubescence. Last ventral segment truncate. Claws simply cleft, lower portion not turned inward.

Similar to the other species with carinate elytra, but of narrower and more-parallel form.

*Agrilus oneratus* sp. nov. Plate 2, fig. 7; Plate 3, fig. 23.

Curtus, elongatulus, elytrorum dorso paulo deplanato; capite viridi-aeneo, thorace aeneo, medio cuprescente, elytris obscure aeneis, fere nigris, carinatis. Capite lato, latitudinem marginis thoracis anterioris haud superante, fronte subconvexa, alutacea, antice aureo pilosa, vertice impresso, transverse rugosulo. Thorace convexo, longitudine  $1\frac{1}{2}$  latiori, latitudinem maximam in medio attingente, lateribus subtilissime rotundatis, lateribus posticis rectis; depressione rotunda praebasali, angulis anticis oblique impressis. Sculptura transversa subtili. Carina prae-humerali forti, subconvexa, cum carina laterali in medio longitudinis lateralis conjuncta; carina laterali leviter subsinuata, carina submarginali ea antice patis approximata ac subparallela, baseos conjuncta. Lobus gularis rotundatus, non emarginatus. Scutello carinato. Elytris dorso subplanis, subrobustis, obscuribus, sculptura minuta; lateraliter usque pone medium fere parallelis, dein paulo dilatatis ac ad apicem attenuatis; apicibus rotundatis, minutissime denticulatis; lateribus pilosis superioribus segmentis abdominis primi detectis. Carina acuta recta humerali, usque ad  $\frac{2}{3}$  longitudinis distincta. Superficie elytrorum pube obscura tecta, solum secundum suturam pilositate

longiore albida haud regulari atque in tertia parte postica interrupta. Segmento anali integro. Tarsis curtis, articulo tarsorum posteriorum primo tres sequentes longitudine adaequante. Unguiculis simpliciter dentatis. Antennis obscure aeneis ab articulo quarto (incl.) dentatis.

Patria: Malay Peninsula, Wellesley (coll. *Obenberger*). Long. 3.5 mm.

Short, narrow, elytra subdepressed dorsally. Head brassy green, shagreened, anteriorly with fine golden pubescence. Vertex impressed, with transverse sculpture. Head convex, but not larger than anterior margin of prothorax. Antennae brassy green, dentate from fourth joint. Prothorax convex, with small circular depression before base, with oblique impression in the anterior angles, 1.2 times as broad as long, the greatest width in the middle, feebly rotundate on sides, with rectangular hind angles. Sculpture superficial and fine. Prehumeral carina anteriorly joining lateral carina nearly in the middle. Gular lobe entire, rotundate. Scutellum transversely carinate. Elytra relatively short, the greatest width behind the middle and here feebly broadened, then narrowed to apex, which is separately rounded and finely denticulate; from humeri pass very sharp, straight humeral carinae, which are distinct to anterior two-fifths. Sculpture of elytra fine, surface covered with obscure pubescence; only a large space along suture clothed with white, sparse pilosity, which is largely interrupted in apical third part. Abdomen dark bronzy, shining, with very fine sculpture and with extremely short, sparse, fine, white pilosity. Last ventral segment truncate. Tarsi short; first joint of hind tarsi as long as the three following together. Claws simply cleft, lower portion not turned inward.

*Agrilus perniciosus* H. Deyrolle. Plate 3, fig. 10; Plate 4, fig. 3.

One specimen of this species comes from Sandakan, Borneo (*Baker*). The species is very similar to my *Agrilus pterochlorus*, but differs very much in the form of the head, which is larger and more convex, with shorter antennae; shorter and laterally more-rounded prothorax, with longer humeral carina which apically is nearer lateral margin of elytra; also in the darker color of the upper surface, etc.

#### Genus *APHANISTICUS* Latreille

A widely distributed genus; a large number of species is known from Africa and from the Oriental and Palæarctic Re-

gions. Only three, rather problematic species, which should perhaps be placed in the genus *Germanica* Blackburn, are described from Australia.

By a queer error some species of *Cylindromorphus* were described by Kerremans as species of *Aphanisticus*; for example, *Aphanisticus bodongi* Kerremans, mentioned from the Philippines, of which I have a paratype in my collection, is a true *Cylindromorphus*.

Some species of this genus are known as dangerous destroyers of sugar plants in Sumatra and eastern India.

*Key to species of Aphanisticus Latreille.*<sup>10</sup>

- a<sup>1</sup>. Surface brilliant green; 3.2 millimeters. (Central Borneo.)  
A. bohaci sp. nov.
- a<sup>2</sup>. Surface black, sometimes with olivaceous, æneous, or cupreous reflections.
- b<sup>1</sup>. Elytra with longitudinal costæ.
- c<sup>1</sup>. Prothorax broadly cordate. Elytral intervals without more distinct transverse costulæ between the longitudinal costæ. Scutellum visible.
- d<sup>1</sup>. Larger, olivaceous. Greatest width of prothorax in front of the middle; 5 millimeters. (Borneo.)..... A. corniceps sp. nov.
- d<sup>2</sup>. Smaller, black. Greatest width of prothorax in the middle; 4 millimeters. (Luzon.)..... A. costipennis Fisher.
- c<sup>2</sup>. Prothorax transverse, sides evenly arcuate, elytral intervals on anterior part of disk transversely costate; scutellum invisible. Black.
- d<sup>1</sup>. Wider, median costa of elytra rather indistinct posteriorly. Head without longitudinal impression behind on vertex, in front of anterior margin of prothorax; 3.5 millimeters. (Malay Peninsula.)..... A. perakensis sp. nov.
- d<sup>2</sup>. Narrower, the elytral costæ strongly elevated. Median costa posteriorly very distinctly elevated. Head with a short longitudinal impression behind on vertex, in front of anterior margin of prothorax; 3.25 millimeters. (Mindanao.)  
A. bakeri Fisher.
- b<sup>2</sup>. Elytra without distinct longitudinal costæ.
- c<sup>1</sup>. Head deeply excavated between eyes.
- d<sup>1</sup>. Pronotum distinctly transversely grooved at middle. Elongate, rather convex, head and prothorax dark bronzy, elytra black, shining; 3.5 millimeters. (Luzon.)..... A. excavatus Fisher.
- d<sup>2</sup>. Pronotum without distinct transverse impression at middle.
- e<sup>1</sup>. Elytra without distinct rows of punctures. Elongate, uniformly piceous, with a bronzy reflection on head and prothorax; 2.9 millimeters. (Luzon, Mindanao.)  
A. piceipennis Fisher.

<sup>10</sup> *Aphanisticus nigroaeneus* Kerremans is not represented in this key. *Aphanisticus bodongi* Kerremans is in reality a *Cylindromorphus*.

- e<sup>1</sup>. Elytra distinctly rather densely seriate-punctate. Rather depressed, dark grayish æneous, with æneous or greenish lateral margin of prothorax. Front æneous; 3 millimeters. (Borneo.)..... *A. sandakanus* sp. nov.
- c<sup>1</sup>. Head not at all or feebly excavated between eyes.
- d<sup>1</sup>. Form very elongate. Dark cupreo-æneous. Prothorax 1.2 times as wide as long; 3.75 to 4 millimeters. (Penang, Singapore.)..... *A. peninsulae* sp. nov.
- d<sup>2</sup>. Form shorter, prothorax wider and shorter.
- e<sup>1</sup>. Pronotum with a deep fovea near posterior angles.
- f<sup>1</sup>. Head rounded in front. Uniformly shining black, with a slight bronzy reflection on sides of pronotum; 3 millimeters. (Mindanao.)..... *A. mindanaensis* Fisher.
- f<sup>1</sup>. Head narrowly, deeply emarginate in front. Dark bronzy, lateral margins of prothorax greenish bronzy, shining; 2.75 millimeters. (Palawan.)..... *A. foveicollis* Fisher.
- e<sup>2</sup>. Pronotum without deep fovea near posterior angles.
- f<sup>1</sup>. Form slender; prothorax widest in front of middle. Uniformly shining black; 3 millimeters. (Luzon.)  
*A. unicolor* Fisher.
- f<sup>1</sup>. Form robust; prothorax widest at middle.
- g<sup>1</sup>. Uniformly bright bronzy black. Front slightly, broadly excavated between eyes. Sides of prothorax widest behind middle, then more strongly narrowed anteriorly; 3.25 millimeters. (Leyte, Mindanao.)  
*A. trachyformis* Fisher.
- g<sup>2</sup>. Black, front flat, without excavation between eyes. Sides of prothorax subparallel on basal half, moderately rounded anteriorly; 3.5 millimeters. (Mindanao.)  
*A. dapitani* sp. nov.

#### *Aphanisticus bodongi* Kerremans.

This species, of which I have in my collection a paratype, is in reality a *Cylindromorphus*. Kerremans has committed more such errors in describing distinct species of *Cylindromorphus* from the African fauna as belonging to *Aphanisticus*, as I have recently found from the types, in connection with his paper.<sup>11</sup> The species there described, *Aphanisticus jeanneli* and *A. alluaudi* Kerremans, the types of which were sent me from the Paris Museum for study, are distinctly *Cylindromorphus* species. The genus *Cylindromorphus* seems to be rather rare in the Oriental Region, though perhaps some species will still be found intermixed with *Aphanisticus*. They are very easily separable from *Aphanisticus* by the position of the eyes. In *Aphanisticus* the eyes (seen laterally) always have the hind margin sinuate or emarginate, while in *Cylindromorphus* the hind margin of

<sup>11</sup> Buprestidæ (par Ch. Kerremans). Voyage de Ch. Alluaud et R. Jeannel en Afrique orientale, Coleopteres 6 (1917) cahier 28, pg. 236.



the eyes is perpendicular and straight, or nearly so. Also, the elongate thoracic carina often present in *Cylindromorphus* is a character which does not occur in true *Aphanisticus*.

*Aphanisticus bohaci* sp. nov. Plate 1, fig. 7.

Corpore supra satis deplanato, alutaceo, laete viridi olivaceo, subtus nigro. Capite medio valde concavo, longo, oculorum marginibus interioribus acutis. Fronte aurata, nitida, fere parallela, satis longa. Thorace longitudine bis latiore, ante medium latitudinem maximam attingente, ad anticem valde rotundatim attenuato, ad basim sinuatim angustato, marginibus satis late deplanatis, impressionibus tribus (media, praebasali ac post marginem anteriorem) transversis fortibus ornato. Scutello minutissime, triangulari. Elytris latitudinis fere  $2\frac{1}{2}$  longioribus, latis, deplanatis, ante apicem prope suturam late haud profunde canaliculatis, alutaceis, usque ad medium fere parallelis, post humeris lateraliter leviter impressis, dein ad apicem attenuatis ac apicibus separatim transverse obtusis. Sutura postice elevata; elytrorum disco postice late obscurato. Corpore subtus nigro, antennis auratis, pedibus nigris, prothorace subparallelo.

Patria: Central Borneo (coll. Obenberger; Boháč leg.) Long. 3.2 mm.

Body rather depressed; very distinctly shagreened; of a beautiful, silky, olivaceous green color. Head rather large, with a wide frontal excavation; inner margins of eyes acute. Front shining, golden, nearly parallel, rather long, and rather narrow. Prothorax nearly twice as wide as long, the greatest width before the middle, then rather strongly sinuate to base, and strongly rounded to anterior angles. Sides rather flattened; disk adorned by three deep transversal impressions. Elytra rather wide, rather flattened, with some feebly indicated longitudinal elevations behind base, widely channeled along suture before apex, apices separately obtuse. Surface of elytra very distinctly shagreened, with a silky, somewhat darker, large macula in posterior part. Antennæ golden, undersurface and legs black.

The single type is in my collection. It was collected by Professor Boháč, an officer of the Czechoslovak Legionaries (Siberian Volunteers) who, returning in 1919 from Vladivostok to Bohemia, was left behind with other specialists that they might make a scientific excursion to inner Borneo. A few insects were collected, among which are *Aphanisticus bohaci*, *Trachys*

*praora*, and *T. miana*, described in this paper. Their collection of plants is of great scientific value.

*Aphanisticus corniceps* sp. nov. Plate 1, fig. 1.

Elongatus, supra deplanus, obscure olivaceo griseus, alutaceus, paullo sericeo nitidus; capite magno, oculorum marginibus intus acutis, fronte inter oculos valde rotundatim excavata, nitida. Prothorace lato, longitudine circiter  $1\frac{1}{2}$  latiore, lateribus deplanatis, latitudinem maximam in parte tertia anteriori attingente; lateribus antice rotundatis, postice ad basim fere recta, satis fortiter attenuatis. Disco in medio late transverse canaliculato, antice ac ante basim transverse depresso. Scutello parvo, triangulari. Elytris latis, latitudine fere  $2\frac{1}{2}$  longioribus, pone medium leviter dilatatis, apicibus late separatim rotundatis; superficie alutacea, satis plana; humeris leviter prominulis, in elytrorum disco carina una longitudinali mediana, carina curta inter eam longam atque suturam posita, carinaque simili brevi in parte elytrali posteriori intra eam longam atque marginem sita ornatis; unaque etiam carina male indicata in parte elytrali apicali marginem lateralem marginante. Carinis illis omnibus satis male indicatis, satis indistincte elevatis. Prosterno antice leviter impresso. Abdomine nigro, glabro. Pedibus nigris, tarsorum articulis subtus luteis ac fortiter dilatatis.

Patria: Borneo, Sandakan (*Baker*). Long. 5 mm.

Elongate, depressed, dark olivaceous gray, feebly silky shining. Head large, laterally parallel, in the middle strongly and deeply emarginate, with acute inner margin of eyes. Prothorax wide, nearly 1.5 times wider than long, the greatest width in anterior third laterally, anteriorly strongly rounded, posteriorly attenuate in a straight line to base. Disk in the middle widely and rather strongly impressed; anterior and posterior margins of prothorax transversely depressed. Elytra rather long, subparallel, a little widened behind middle, then attenuate to apex which is widely and separately rounded. Surface covered with very distinct shagreening, and presenting on each side a median longitudinal, better-developed carina, with two other short carinae; one between suture and median carina on basal part of each elytron, the other between median carina and lateral margin on apical part. There is also a curved sublateral carina, parallel and near to lateral margin. All these carinae are rather feebly developed and not very high. Abdomen hairless and blackish. Prosternum with a small punctiform impression ante-

riorly. Legs blackish, tarsi short, undersurface of each tarsal article yellow and broad; tarsi much wider than usual.

*Aphanisticus sandakanus* sp. nov. Plate 1, fig. 6.

Niger, nitidus, fronte aeneo; corpore satis depresso; capite magno, convexo, subparallelo, oculis parvis, haud prominulis, fronte valde concava, latitudinis paullo longiore. Thorace longitudine fere  $1\frac{3}{4}$  latiore, satis deplanato, in medio latitudinem maximam attingente, ad basim leviter sinuatim, ad anticem valde ac rotundatim attenuato; antice ac ante basim fortiter transverse impresso, lateribus satis late deplanatis; scutello minutissimo, triangulari. Elytris usque ante medium parallelis, lateribus pone humeris impressis, ad apicem fortiter, longe attenuatis, apicibus tenuiter separatim rotundatis, cupreo unicalibus. Superficie minute ac subtiliter seriatim punctata, seriebus his in parte apicali evanescentibus; elytris haud robustis, latitudine fere  $2\frac{1}{2}$  longioribus. Prosterno parallelo. Corpore subtus pedibusque nigris, antennis auratis.

Patria: Borneo, Sandakan (*Baker*). Long. 3 mm.

Black, rather shining, only the front brassy. Body rather depressed. Head rather large and convex, with small and not prominent eyes. Front excavated, parallel-sided, a little longer than wide. Preoral pores visible from before. Antennæ golden. Prothorax rather wide, nearly 1.75 times wider than long, rather uneven, having two strong transverse impressions, one before base and the other behind anterior margin which is strongly emarginate; lateral margins rather flattened on sides, the greatest width in the middle, then attenuate and a little sinuate to base, and rounded at anterior angles. Prosternum rather narrow and parallel. Scutellum very small and triangular. Elytra rather flattened, nearly  $2\frac{1}{2}$  times longer than wide, with a lateral impression behind humeri, parallel to the middle, then attenuate to apex, where they are narrowly and separately rounded and narrowly cupreous; sculpture consisting of fine, dense, punctate striæ which disappear before apex. Underside and legs black.

The single type of the Baker collection bears the No. 12633.

*Aphanisticus peninsulae* sp. nov. Plate 1, fig. 3.

Elongatus, obscure cupreo-aeneus, supra modice depressus, attenuatus. Capite satis convexo, in medio levissime depresso, fronte tenui, lateribus parallelis. Thorace satis elongato, longitudine solum  $\frac{1}{2}$  latiori, in parte anteriori quinta latitudinem maxi-

mam attingente, lateribus haud deplanatis, ad basim ac ad anticem solum modice attenuatis, in medio ac ante basim depressione transversa lata ac haud profunda. Scutello minuto, triangulari. Elytris latitudine fere  $3\frac{1}{4}$  longioribus, post medium paulo dilatatis convexis, glabris, alutaceis, antice subtiliter dense, haud distincte seriatim punctatis, sculptura hac in parte apicali evanescente; lateribus ad apicem satis fortiter ac longe attenuatis, apicibus singulatim rotundatis. Prosterno haud lato, parallelo.

Patria: Penang Island; Singapore (*Baker*). Long. 3.75–4 mm.

Elongate, hairless, dark cupreo-æneous, with a fine, microscopical sculpture (shagreening); rather convex; head rather large and rather convex, with a very feeble median impression; front between eyes narrow and with parallel sides. Preoral pores visible from before. Thorax rather long, only 1.2 times as wide as long, the greatest width in anterior fifth part, then rather feebly attenuate to base; on disk with a median and a basal transverse depression. Scutellum very small and triangular. Elytra elongate, rather narrow, a little enlarged behind middle, then rather strongly attenuate to apex, where they are separately rather narrowly rounded at tip. Sculpture consists of a rather fine series of rather indistinctly indicated punctures, which disappear on apical half of elytra.

This species resembles very much some forms from eastern India and Sumatra. There are two types in the Baker collection.

*Aphanisticus bakeri* Fisher. Plate 1, fig. 4.

In the material sent to me there was a single specimen of this very interesting species, taken at Iligan, Mindanao (*Baker*), from which has been prepared the figure given here.

*Aphanisticus perakensis* sp. nov. Plate 1, fig. 2.

Niger, minutissime alutaceus, satis nitidus elongatus, paulo convexus. Capite satis magno, latitudine longitudinem  $\frac{1}{4}$  superante, lateribus subparallelis, oculis parvis, temporibus longis, inter oculos profunde rotundatim late excavato, oculis intus acute marginatis. Thorace longitudini fere bis latiori, latitudine maxima in medio; hic subanguloso, lateribus ad apicem ac ad basim fere recte attenuatis. Superficie in angulis anticis ac posticis impressa, in medio linea transversali forti impressa; ante marginem basalem ac anteriorem transverse depressa. Prosterno subparallelo, satis lato. Elytris latitudinis fere  $2\frac{1}{3}$



longioribus, humeris leviter prominentibus, in medio lateraliter paullo dilatatis, dein ad apicem subrotundato attenuatis ac apicibus separatim satis tenuiter truncato rotundatis. Lateribus post humeris leviter impressis, superficie propter impressionem latam praesuturalem ac apicalem ac propter carinam longitudinalem brevem ac haud fortiter elevatam satis in aequali. Inter hanc carinam basalem ac inter suturam rugae nonnullae transversae haud densae observantur. Sutura postice satis fortiter elevata. Abdomine glabro, nigro, segmento anali apice truncato. Pedibus nigris, tarsis subtus testaceis.

Patria: Malay Peninsula (coll. Obenberger). Long. 3.5 mm.

Black, rather shining, covered with fine microscopical shagreening. Form elongate, but rather depressed. Head rather large, nearly parallel laterally, in the middle between eyes with a deep, wide, rounded emargination. Prothorax nearly twice as broad as long, the greatest width in the middle, then subangulate and attenuate in a nearly straight line to base and to apex, with a small depression in anterior and hind angles, with a deep and rather narrow median, transverse, entire impression; behind anterior margin and before base with a transverse depression. Scutellum triangular and small. Elytra rather elongate, about  $2\frac{1}{2}$  times longer than wide, the greatest width before the middle, where they are a little enlarged, then attenuate to apex which is rather narrowly separately truncately rounded; surface rather uneven, having a short basal (only before the middle) median carina; between this carina and suture, which is elevated in apical part, are some wide, not dense, transverse rugæ. Part of each elytron along suture and before apex widely concave. Undersurface and legs black, only the tarsi testaceous. Prosternum without impression, rather wide, parallel, rounded at tip.

The single specimen of this small species in my collection came from the old collection of Meyer-Darcis.

*Aphanisticus dapitani* sp. nov. Plate 1, fig. 5.

Niger, nitidus, minutissime sculptus, glaber; corpore satis deplanato. Capite satis parvo, fronte haud impressa, inter oculos parallela, attenuata. Oculis haud prominentibus. Thorace glabrato, aequali, longitudine fere bis latiore, antice fortiter rotundatim emarginato, angulis anticis satis prominulis, postice valde sinuato, lobo medio producto; lateribus deplanatis, disco aequali, nitido, haud canaliculato. Latitudinem maximam in medio attingente, ad basim parallelo, ad anticem satis fortiter rotundatim attenuato. Scutello triangulari, parvo. Elytris

latis, sutura postice parum elevata; humeris leviter prominentibus, lateribus post humeris impressis. Elytris ante medium leviter dilatatis, dein ad apicem longe ac satis fortiter attenuatis, apicibus leviter obliquis ac tenuiter separatim obtusis. Superficie minutissime sculpta, alutacea, in parte anteriori elytrorum punctis aliquot minutissimis haud valde distinctis. Prosterno ad apicem valde dilatato, lato.

Patria: Mindanao, Dapitan (*Baker*). Long. 3.5 mm.

Rather wide; upper surface rather depressed; black, rather shining, with a very fine sculpture. Head rather small, convex, front between eyes parallel; preoral pores covered and not visible from in front. Prothorax rather wide, equal, without transverse impression, with rather widely deplanate sides, and with a deep and semicircular emargination on anterior margin; basal margin very sinuate, median lobe produced. Elytra rather depressed, nearly 2.5 times as long as total width, with rather prominent humeri, having small lateral impressions behind them; before middle a little enlarged, and then rather strongly attenuate to apex, which is a little oblique and obtuse at tip. Prosternum rather wide and enlarged at tip.

A single type in the Baker collection bears the number 13791.

#### Genus ENDELUS H. Deyrolle

This genus resembles *Aphanisticus* in many cases, and probably has the same manner of life. No species of the genus known to me has the microscopical shagreening always present in *Aphanisticus*.

##### *Key to the species of Endelus H. Deyrolle.*

- a*<sup>1</sup>. Surface of elytra very uneven; wide, elongate species. Head very wide, but narrower than the cordiform pronotum. Dark violaceous, shining; 4.5 millimeters. (Luzon.)..... *E. belial* sp. nov.
- a*<sup>2</sup>. Surface of elytra evenly convex, without impressions.
- b*<sup>1</sup>. Form robust, head much narrower than pronotum. Broadly ovate, head and pronotum bluish black, the latter with the anterior angles reddish, shining, elytra bright violaceous; beneath bronzy green; 5.25 millimeters. (Mindanao.)..... *E. violaceipennis* Fisher.
- b*<sup>2</sup>. Form elongate, head as wide or nearly as wide as pronotum.
- c*<sup>1</sup>. Pronotum broadly cordate.
- d*<sup>1</sup>. Black, with violaceous reflections. Elongate, attenuate posteriorly; black beneath. Pronotum twice as wide as long, broadly cordate, widest at anterior fourth. Elytra rather indistinctly punctured; 3.75 millimeters. (Palawan.)

*E. palawanensis* Fisher.

d<sup>2</sup>. Uniformly bronzy. Shorter, pentagonal. Elytra with distinct puncturation; 3.5 to 4 millimeters. (Luzon.)

*E. bakeri* Kerremans.

c<sup>2</sup>. Pronotum transverse, sides arcuately rounded.

d<sup>2</sup>. Elytra bicolored. Elongate. Head and pronotum bright greenish bronze, elytra violaceous with a round spot on humeri, a smaller one along side of scutellum, and a transverse crescent-shaped spot behind middle, green; 3.25 millimeters. (Negros.)

*E. lunatus* Fisher.

d<sup>2</sup>. Elytra unicolored, only rarely with a small humeral, rather inconspicuous spot..... *E. aphanisticinus* sp. nov.

e<sup>1</sup>. More robust, shorter, pronotum twice or more than twice as wide as long.

f<sup>1</sup>. Pronotum twice as wide as long, rather robust; head and pronotum bright greenish bronzy, elytra æneous; beneath bronzy; 4.5 millimeters. (Luzon.) *E. aeneipennis* Fisher.

f<sup>1</sup>. Pronotum more than twice as wide as long. Prothorax golden or æneous, elytra blue or greenish blue.

g<sup>1</sup>. Anterior part of front green. Front narrower. Temples not developed. Thoracic transverse impressions more approximate. Sides of prothorax more rounded. Elytra wider; 2.6 millimeters. (Borneo.)

*E. borneensis* sp. nov.

g<sup>2</sup>. Front entirely golden, wider. Temples short but distinctly developed. Transverse thoracic impressions more distant. Sides of prothorax feebly rounded. Elytra slender; 2.7 millimeters. (Singapore.)

*E. bakerianus* sp. nov.

e<sup>2</sup>. Elongate, agriliform. Pronotum less than twice as wide as long, narrower.

f<sup>2</sup>. Very elongate, black with olivaceous reflection, the humeri with a minute blue spot; 4 millimeters. (Singapore.)

*E. aphanisticinus* sp. nov.

f<sup>2</sup>. Without colored spot on humeri.

g<sup>2</sup>. Elongate, very slender, agriliform; head and pronotum coppery bronze; elytra dark reddish bronze with a slight violaceous reflection; beneath bronzy; 4.75 millimeters. (Mindanao.)..... *E. agriliformis* Fisher.

g<sup>2</sup>. More robust; head and prothorax red, with golden reflections; elytra blue, prosternum black, remainder of undersurface æneous, with greenish reflections; 5 millimeters. (Sumatra, Java, Borneo, Singapore.)

*E. empyreus* H. Deyrolle.

*Endelus belial* sp. nov. Plate 1, fig. 11.

*E. difforni* H. Deyrolle simillimus.

Niger, brunnescens, nitidus, glabratus, superficie elytrorum valde inaequali. Capite latissimo, oculis valde prominulis, temporibus distinctis; fronte inter oculos valde excavata, curta,

longitudine fere latiori, cuprea; antennis nigris, curtis. Thorace in tertia parte anteriori latissimo, fortiter cordiformi ac attenuato, latitudine maxima in parte tertia anteriori; in disco impressione media profunda transversa, ac impressionibus anteriori ac basali, similibus, minus profundis. Scutello triangulari, magno. Elytris latis, lateribus usque ad medium parallelis, dein leviter dilatatis, ac ad apicem satis fortiter attenuatis, apicibus subrotundatis, latis. Superficie elytrorum nitida, his valde inaequalibus, impressionibus satis profundis ac satis latis, subrotundatis ut sequibus: una basali prope humeros, una longa, subhumerali, attenuata, una rotunda in parte tertia anteriori prope suturam, una ante medium, in elytrorum medio, una prolongata praeapicali. Corpore subtus nigro, nitido, tarsis subtus testaceis.

Patria: Philippines, Los Baños (*Baker*). Long. 4.5 mm. Lat. 1.8 mm.

This species resembles very much *Endelus difformis* H. Deyrolle.<sup>12</sup>

Upper surface very uneven; dark brown, nearly black, with metallic luster, shining. Head very wide; eyes laterally strongly prominent; temples distinctly developed; front widely excavated between eyes, very short, very slightly wider than long, of a coppery color. Antennæ short and black. Prothorax short, very wide, the greatest width in anterior third part, then strongly cordiform, with three transverse impressions; median impression deep and strong, the others feebler and less distinct. Scutellum relatively large and triangular. Elytra wide and rather slightly convex; sides parallel to middle, then widened and rather strongly attenuated to apex which is broad and separately rounded; surface very uneven, with two large rounded irregular impressions on disk, one basal and one preapical (elongate) depression; behind humeri with a longitudinal lateral impression. These impressions seem to be less strong than in *E. difformis*. Undersurface black, shining; prosternum broad and short; tarsi on undersurface yellowish.

From *E. difformis* this species differs by the less-developed impressions, lesser width, very different form of prothorax, etc.

*Endelus bakerianus* sp. nov. Plate 1, fig. 13.

Supra nitidus, glaber, subdepressus. Capite lato, glabro, in medio valde longitudinaliter impresso, impunctato, aureo, nitido. Oculis lateraliter valde prominentibus, temporibus distinctis.

<sup>12</sup> Ann. Soc. Ent. Belg. 8 (1864) pl. 3, fig. 9.



Epistomate valde attenuato, cavitatibus antennarum obliquis, antennis nigris ac curtis. Thorace curto, latitudine fere  $2\frac{1}{2}$  longiore, lateraliter latitudine maxime perparum ante medium attingente, lateribus leviter subrotundatis. Disco nitido, glabro, aeneolo, impunctato, depressionibus duo profundis transversalibus ornato. Elytris cyaneis, nitidis, glabratis, minute ac haud dense punctatis, thorace multo latoribus, lateribus usque ad medium subparallelis, dein ad apicem fortius attenuatis ac apicibus subtruncatis; humeris haud prominulis, solum impressione basali subrotundata prope humeros ac utrinque impressione longula posthumerali ornatis. Subtus corpore nigro, nitido, prosterno lato, parallelo, pedibus nigris, tarsorum articulis subtus testaceis.

Patria: Singapore (*Baker*). Long. 2.7 mm. Lat. 7.2 mm.

This species resembles very much *Endelus weyersi* Kerremans from Sumatra, but can be very easily distinguished by the smaller size, developed temples behind the eyes, tarsi, prothoracic form, and the presence of two very deep and very distinct transverse impressions on the prothorax.

Glabrous, shining, rather depressed. Head large, glabrous, without puncturation, strongly shining, of clear golden color. Eyes strongly prominent laterally, with distinct temples behind them. Prothorax brassy, broad, nearly 2.5 times broader than long, the greatest width shortly before the middle, on sides moderately rounded, without pilosity or distinct puncturation, on disk with two deep, narrow, entire, transversal impressions. Elytra feebly convex, blue, strongly shining, much broader than prothorax, laterally parallel nearly to middle, then moderately attenuate and subtruncate at apex, with two distinct impressions; one on each side in the middle of the base of elytron, the other lateral and long, behind the humeri. Undersurface dark, black, shining; legs rather short, the tarsal lamellæ red on undersurface.

*Endelus borneensis* sp. nov. Plate 1, fig. 14.

Speciei *E. bakerianus* sp. nov. simillimus, ac solum ita distinctus: Fronte minus lata, antice smaragdinea; temporibus post oculis nullis; thorace nitidior, magis aurato, impressionibus transversalibus plus approximatis; lateribus thoracis magis rotundatis. Elytris cyaneis, fortius punctatis, minus latis, post humeris latitudinem maximam attingentibus, dein ad apicem in linea curvata longa rotundate attenuatis. Subtus similiter instructus, tarsi obscuris.

Patria: Borneo, Sandakan (*Baker*). Long. 2.6 mm. Lat. 1.2 mm.

This species is closely allied to *Endelus bakerianus* sp. nov.

Elytra of similar color; anterior parts of front green, vertex and prothorax golden and strongly shining. Temples not developed; front narrower than in *E. bakerianus*. The two deep and straight transverse impressions more approximate. Sides of prothorax more rotundate laterally. Elytra more strongly punctured, wider, more convex, the greatest width behind humeri, and then attenuate in a slightly rounded line to apex. Undersurface black and shining; tarsi dark, nearly black.

*Endelus aphanisticus* sp. nov. Plate 1, fig. 12.

Glabratus, elongatus, niger, humeris macula minima violascente ornatis, subnitidus. Corpore longo, subcylindraceo; capite lato, oculis lateraliter valde prominentibus, fronte lateribus parallelis latitudine (ab epistomate usque ad verticem) fere  $1\frac{1}{2}$  longiori, punctis setiformibus post epistomalibus duo mediis valde approximatis, in medio impressione lata ac profunda longitudinali, antennis nigris. Thorace longitudine fere  $1\frac{1}{2}$  latiori, lateribus rotundatis, impressionibus in disco duo transversis latis ac haud profundis. Elytris longissimis, convexis, fere impunctatis, impressione laterali post humeris, in medio leviter dilatatis, dein ad apicem longe attenuatis, apicibus late subrotundatis; subtus niger, nitidus, abdomine glabro, pedibus curtis, tarsis subtus ochraceis, prosterni processu tenui.

Patria: Singapore (*Baker*). Long. 4 mm. Lat. 0.9 mm.

This species resembles very much some species of the genus *Aphanisticus*.

Very elongate, glabrous, black, shining, with a small violaceous spot on humeri. Head large; eyes laterally very distinctly prominent; temples short but distinctly developed. Front parallel, nearly 1.25 times longer than wide (from epistome to vertex). On anterior part of head four (two lateral, two median) setiform punctures, the two median ones very approximate. Antennæ black and relatively short. Entire upper surface microscopically shagreened. Prothorax nearly  $1\frac{1}{2}$  times wider than long, the greatest width in the middle, rather strongly rounded on sides, with two rather superficial and rather feebly distinct, transverse impressions on disk. Scutellum very small, triangular. Elytra very long, with a long lateral depression behind humeri, moderately broadened behind middle, then long-attenuate and widely rounded on apex. Undersurface black

and shining; median process of prosternum narrow; legs short, femora of hind pair of legs moderately enlarged, undersurface of tarsi yellowish.

*Endelus empyreus* H. Deyrolle.

In the material of the Baker collection there was only one specimen of this species from Singapore. This species was described from Sumatra, but I have seen specimens of it from Penang also. Rather common in Sumatra.

#### Genus *TRACHYS* Fabricius

A large and very difficult genus. The species of *Trachys* occur in rather large numbers in the Palearctic Region; a large number of species are known from Africa; the largest number live in oriental regions. From America they are known only from the central part, in about four species. A few species occur in Australia.

Thomson<sup>13</sup> has separated a section having a longitudinal carina on elytra and a rather different habitus, under the name *Habroloma*. This carina varies rather greatly; in some species it is short and developed near the humeri only.

The species of this genus are more or less oval or elongate, convex or flattened. Head always rather wide, with a more or less deep concavity in the middle of the front, and with a longitudinal impression. Antennæ rather short, black; in very rare cases (*T. cornuta* Kerremans) the first joint of the antennæ is produced in the form of an elongate tooth. It is remarkable that the second species, with similar character (in my collection, not yet described) comes from Africa—from Fernando Po.

For the systematic study of *Trachys* the form of the head is very important. The antennal cavities are in the form of more or less broad and more or less approximate grooves; therefore, the epistome between them varies very much in width and length. Behind the epistome, which is sometimes divided by a transverse carina from the remainder of the front, are four postoral pores. These pores, surely sense organs, are characteristic for all Trachydini and also for the Agrilini, where they are sometimes modified. Generally, in *Trachys*, only the two middle ones are distinct; the two lateral ones are microscopical, very indistinct, and are situated near the antennal

<sup>13</sup> Skand. Coleop. 6: 42.

cavities. The position and breadth of these two pores are of taxonomic importance in this genus. Their importance will be clearer when it is remembered that in nearly every species of *Brachys*, *Callimicra*, or *Liopleura* (other genera of Trachydini) the position of these pores is characteristic. This minute and not variable character was neglected by the older authors. The second very important and not variable character is the form of the prosternum; it may be wide or long, with parallel or sinuate sides, etc. Also, the color of the tarsi is constant; these (at least the lamellæ) are either black or testaceous.

Specimens of *Trachys* should be mounted on little, elongate, triangular slips to enable one to see the prosternum. The pilosity of the elytra is sometimes rather variable. Because Kerremans makes no mention in his descriptions of the form of the head or of the prosternum, many of his species are of very problematic value.

*Key to the species of Trachys Fabricius.*<sup>34</sup>

- a<sup>1</sup>. Elytra with distinct, sometimes very fine, longitudinal carina on the humeri. (Subgenus *Habroloma* Thomson.)
  - b<sup>1</sup>. Humeral carina of elytra short and strong; short, robust, violaceous blue. An arcuate transverse preapical band extending along elytral suture toward scutellum, formed of gray pilosity; 4.5 millimeters. (Luzon.)..... *T. luzonica* Kerremans.
  - b<sup>2</sup>. Humeral carina finer, long, entire.
    - c<sup>1</sup>. First joint of antennæ strongly widened, produced in the form of a prominent tooth. Head and prothorax dark æneous, nearly black, elytra bright æneous with a dark postmedian transverse band; behind this band on each side with a white, pilose, V-shaped fascia; 3 millimeters. (Luzon.)..... *T. cornuta* Kerremans.
    - c<sup>2</sup>. First joint of antennæ not dilated or produced, normal.
      - d<sup>1</sup>. Epistomie narrowed between antennæ, not transverse.
        - e<sup>1</sup>. Surface above glabrous. Ovate, slightly convex, rounded posteriorly, uniformly black above and beneath. Intercoxal process flat, transverse, sides nearly parallel to posterior angles, which are rounded; 2 millimeters. (Mindanao.)  
*T. glabra* Fisher.
        - e<sup>2</sup>. Surface above pubescent.
      - d<sup>2</sup>. Epistomie narrowed between antennæ, not transverse.
        - f<sup>1</sup>. Elytral pilosity white or gray.
          - g<sup>1</sup>. Elytral pilosity equal, disposed in fine longitudinal series, denser apically. No transverse fasciæ or designs on elytra. Anterior angles of prothorax with a wide impression. Black, oval-pentagonal; 2.2 millimeters. (Palawan.)..... *T. palawana* Kerremans.

<sup>34</sup> The following species reported from the Philippine Islands are not represented in this key: *Trachys dubia* E. Saunders, *T. rufescens* Kerremans, *T. bakeri* Kerremans, and *T. fraterna* Kerremans.



- g*<sup>1</sup>. Elytral pilosity unequal.
- h*<sup>1</sup>. Larger, a long, lyriiform, glabrous macula common to both elytra. Front narrower, head longer; inner margins of eyes less acute, more produced anteriorly; 2.8 millimeters. (Singapore.)... *T. conscripta* sp. nov.
- h*<sup>2</sup>. Smaller. Front wider, head shorter, inner margins of eyes sharper, less produced anteriorly. Maculation of elytra irregular; 2.2 millimeters. (Singapore.)  
*T. speciosella* sp. nov.
- f*<sup>2</sup>. Elytral pilosity yellow or golden.
- g*<sup>1</sup>. Yellow pilosity of upper face very regular, denser; head less produced anteriorly; sides of prothorax more narrowed to apical angles. Front wider. Tarsal lamellæ black. More ovoidal; 2.6 millimeters. (Singapore.)... *T. uniformata* sp. nov.
- g*<sup>2</sup>. Pilosity of upper surface dense, less regular; a transverse space in middle of elytra nearly hairless. Sides of prothorax more strongly rounded, less narrowed to anterior angles. Front narrower. More cuneiform. Tarsal lamellæ testaceous; 2.8 millimeters. (Borneo.)  
*T. saundersiana* sp. nov.
- a*<sup>2</sup>. Epistome wide between antennæ, transverse.
- e*<sup>1</sup>. Head without distinct lateral pores in the form of deep pits above base of antennæ.
- f*<sup>1</sup>. Above dark bronze, shining, beneath shining black. Elytra clothed with yellow pilosity, forming three inconspicuous transverse bands, interrupted on suture. Pronotum with a small oblong depression near each posterior angle; clothed with white pubescence; 3.25 millimeters. (Mindanao.)... *T. metallica* Fisher.
- f*<sup>2</sup>. Greenish æneous; elytra clothed with yellow, subserially disposed pubescence; on each elytron two white maculæ near suture. Pronotum with a depression near anterior angles, clothed with yellow pubescence, with a rather indistinct white spot in front angles; 2.4 millimeters. (Borneo.)  
*T. sandakana* sp. nov.
- e*<sup>2</sup>. Head with distinct lateral pores in the form of rather large and deep pits above base of antennæ.
- f*<sup>1</sup>. Surface above unicolored.
- g*<sup>1</sup>. The pale elytral pubescence bicolored, white and yellow or pale and brown.
- h*<sup>1</sup>. Larger. Elytral fasciæ very flexuous and distinct in anterior half. Epistome very wide, above separated from front by a fine straight transverse carina; 3.3 millimeters. (Singapore.)... *T. singaporensis* sp. nov.
- h*<sup>2</sup>. Smaller. Elytral fasciæ less pronounced, less flexuous. Epistome not separated from front by a transverse carina.
- i*<sup>1</sup>. Head narrower, produced anteriorly. Inner margins of eyes feebly but distinctly prominent in front; epistome a little narrower, the two pores larger and

more distinct. Form more attenuate posteriorly; pronotum with more strongly rounded sides, less attenuate in front. Bright bronzy above, pubescent, black beneath; 3 millimeters. (Mindanao.)

*T. philippinensis* Fisher.

- ♂. Head wider, inner margins of eyes not prominent; epistome wider, the two pores smaller, less distinct. Form elongate and more parallel. Pronotum with less strongly rounded sides, more strongly attenuate in front; 2.9 millimeters. (Borneo.)

*T. bakeriana* sp. nov.

- g<sup>2</sup>. The clear elytral pubescence white; apparently hairless spaces covered with a very fine, inconspicuous black pilosity.

- h<sup>1</sup>. Smaller, black. Epistome narrower; prosternal process much wider than long. Shining; surface covered with a fine, thin, gray, rather unequal pilosity. Inner margins of eyes not prominent; 2.6 millimeters. (Borneo.)..... *T. dajakorum* sp. nov.

- h<sup>2</sup>. Larger. Dark blue above. Epistome very wide. Prosternal process wide, but distinctly longer than wide.

- ♂. Larger, wider, more robust, more flattened. Head less wide, eyes distinctly prominent; prothorax wider, more deeply emarginate at anterior margin; basal angles not prominent, acute. Elytra wider, more flattened. Prosternal process distinctly longer. Legs longer; 3.2 millimeters. (Central Borneo.)

*T. praora* sp. nov.

- ♂. Narrower, smaller, less robust, more convex. Head wider, eyes not prominent anteriorly, prothorax narrower, with less deep emargination at anterior margin; basal angles distinctly produced and prominent posteriorly. Elytra slenderer, more convex. Prosternal process distinctly shorter. Legs shorter; 2.9 millimeters. (Central Borneo.)

*T. miana* sp. nov.

- f<sup>2</sup>. Surface above bicolored.

- g<sup>1</sup>. Sides of pronotum widely flattened. Cuneiform, very much dilated anteriorly; head, pronotum, suture, and posterior third of elytra bronzy; anterior two-thirds of elytra, except suture, dark blue, with a violaceous reflection; pubescent; 3 millimeters. (Mindanao.)

*T. cuneiformis* Fisher.

- g<sup>2</sup>. Sides of pronotum not distinctly flattened. Elongate, head and pronotum dark blue; elytra dark violaceous blue, becoming slightly bronzy posteriorly, pubescent; beneath black, with a metallic reflection; 3 millimeters. (Mindanao.)..... *T. mindanaensis* Fisher.

a<sup>1</sup>. Elytra without longitudinal carina along lateral margin. (Subgenus *Trachys* s. str.)<sup>15</sup>

b<sup>1</sup>. Intercoxal process wider than long, apex truncate. Oblong-ovate, convex, slightly enlarged anteriorly, rounded posteriorly; above bronzy black, pubescent; beneath black, with a metallic reflection; 4 millimeters. (Mindanao.)..... *T. picta* Fisher.

b<sup>2</sup>. Intercoxal process longer than wide, apex rounded.

c<sup>1</sup>. Epistome narrow between antennæ, not transverse.

d<sup>1</sup>. Surface unicolorous.

e<sup>1</sup>. Uniform piceous above, with a slight bronzy reflection. Entire anterior two-thirds of elytra rather densely clothed with short, very fine, piceous hairs, with the exception of a few scattered pale yellow hairs near scutellum; entire apical third densely clothed with pale yellow, recumbent hairs, this space with the anterior margin angulate and with a round dark spot on the middle of each elytron at apical fourth; 2.75 millimeters. (Palawan.)..... *T. piceiventris* Fisher.

e<sup>2</sup>. Black above, with a slight violaceous reflection. With white and yellow pilose ornamentation on disk of elytra.

f<sup>1</sup>. Smaller, more parallel; head narrower; front narrower, with more distinct impression in middle; inner margins of eyes more acute; anterior angles of prothorax less prominent in front, less acute. Elytra less robust, with a long post-scutellar yellow macula on suture, a transverse and post-median fascia, and an apical fascia formed of white hairs; 2.7 millimeters. (Borneo.)..... *T. subaeneella* sp. nov.

f<sup>2</sup>. Larger, more attenuate posteriorly. Head a little wider, front distinctly wider; less impressed in middle; inner margins of eyes more obtuse; anterior angles of prothorax more prominent in front and sharper. Elytra more robust; two laterally indistinct transverse yellow fasciæ on basal part, widely joined together on suture, with a white macula laterally; 2.9 millimeters. (Singapore.)

*T. scriptella* sp. nov.

d<sup>2</sup>. Surface bicolored; head and pronotum dark æneous, elytra blue with violaceous reflections, nearly hairless; apical third cupreous and covered with dense yellow pilosity; 2.7 to 2.9 millimeters. (Borneo, Singapore, Palawan.)

*T. cupripyga* Deyrolle.

c<sup>2</sup>. Epistome transverse, wide between antennæ.

d<sup>2</sup>. Epistome arcuately emarginate in front.

e<sup>3</sup>. Surface above glabrous. Elongate, strongly convex, rounded posteriorly, head and pronotum bronzy black; elytra bright cyaneous, beneath black. Intercoxal process elevated, elongate, wider behind than in front, rounded at tip; 2.9 millimeters. (Leyte.)..... *T. cyanipennis* Fisher.

<sup>15</sup> Here belong also *T. dubia* E. Saunders, *T. rufescens* Kerremans, and *T. bakeri* Kerremans.

e<sup>2</sup>. Surface above pubescent.

f<sup>1</sup>. Color above blue or black, with violaceous luster.

g<sup>1</sup>. Elytra adorned with a single wide preapical white transverse fascia. Bright blue, with prominent humeri, beneath æneous. Head excavated between eyes; 2½ lines. (Central Luzon.)..... *T. princeps* E. Saunders.

g<sup>2</sup>. Elytra adorned with three or four very flexuous, narrow, anteriorly rather interrupted transverse fasciæ. Black, with violaceous reflections, feebly shining, rather robust, rather elongate. Humeri only slightly, moderately prominent. Head feebly excavated between eyes; 3.1 millimeters. (Mindanao.)..... *T. fisheri* sp. nov.

f<sup>2</sup>. Color above dark bronze, æneous, or cupreous.

g<sup>3</sup>. Elytra with a V-shaped design; ovate, moderately convex, rounded posteriorly; above dark bronzy, pubescent; beneath black, shining; 4.44 millimeters. (Mindanao.)

*T. lunata* Fisher.

g<sup>2</sup>. Elytra without V-shaped design.

h<sup>1</sup>. Surface covered with sparse white pilosity, without intermixed yellow or reddish brown recumbent hairs; remaining surface of elytra hairless, shining, without recumbent black hairs. Brassy; 2.5 millimeters. (Penang.)..... *T. isolata* sp. nov.

h<sup>2</sup>. Surface covered with white and yellow or with white and reddish brown pilosity.

ℓ. Pronotum clothed with white and dark reddish pilosity; elytra covered with long, very slender, black hairs, intermixed with broader silvery white recumbent ones, the white hairs forming irregular designs on anterior half and a double transverse zigzag row at apical third. Eyes rather strongly margined on inner sides. Sides of pronotum rather flattened. Oblong-ovate, head of slight bronzy color, pronotum and elytra piceous, the former with bronzy reflections; 3.65 millimeters. (Mindanao.)

*T. marmorata* Fisher.

ℓ<sup>2</sup>. Pilosity of pronotum and of elytra of the same color.

j<sup>1</sup>. Æneous, more equally covered with yellow pubescence; the white maculæ between the yellow hairs rather indistinct. Smaller, wider, more rounded apically. Prosternal process wide, flattened, distinctly dilated apically, rounded at tip. Palpi and tarsi testaceous; 2.6 millimeters. (Borneo.)

*T. eschscholtzi* sp. nov.

j<sup>2</sup>. Darker æneous to cupreous, with less equal and less dense pilosity; the fasciform white ornamentation is much more distinct. Larger, more elongate and more convex.

k<sup>1</sup>. Sides of pronotum narrowed to anterior angles in a nearly straight line. More robust, with seven



small white spots on pronotum. Prosternal process narrower, a little dilated at tip. Tarsi dark brown; 3 millimeters. (Formosa, Luzon.)

*T. formosana* Kerremans.

k. Sides of pronotum narrowed to anterior angles in a feebly but distinctly rounded line. Pronotum with two or three indistinct white spots. Slender. Prosternal process wider, with parallel sides. Tarsi and palpi testaceous; 3 millimeters. (Mindanao.)... *T. dapitana* sp. nov.

d. Epistome rectangularly marginate in front.

e. Tarsal joints black. Form ovate, rounded posteriorly. Head and pronotum dark bronzy, beneath black; elytra piceous, with bronzy reflection; 2.5 millimeters. (Luzon.)

*T. ovata* Fisher.

e. Tarsal joints yellow. Form ovate, rather wide. Head and prothorax green, elytra black with æneous reflections; 2.75 millimeters. (Manila, Luzon.)..... *T. viridula* Kerremans.

*Trachys* (subg. *Habroloma*) *conscripta* sp. nov. Plate 4, fig. 32.

Obscura, olivaceo aenea, partibus glabris elytrorum paullo obscuratis. Parum convexa, cuneiformis, satis supra deplana. Carina elytrali tenui distincta. Capite medio late depresso, oculis satis fortiter anguloso productis, sed solum paullo magis prominentibus quam anguli thoracis anteriores. Fronte medio leviter impressa pilis raris albosericeis inaequaliter tecta, oculorum marginibus interioribus ad epistoma satis fortiter convergentibus. Poris mediis postoralibus duo similiter quam antennarum cavitatibus valde approximatis, epistomate valde attenuato. Antennis nigris, articulis quinque apicalibus triangularibus, satis dilatatis. Thorace lato, lateribus postice subparallelis, ad angulos anticos late rotundato, angulis antici satis productis. Superficie sparse ac subtiliter, satis inaequaliter albosericea. Elytris ad apicem satis fortiter attenuatis, antice satis rugoso sculptis, humeris paullo prominulis. Superficie tota sparse ac aequaliter, subseriatum albosericea; solum macula magna communi lyriformi ac macula utrinque parva rotunda praeapicali glabris (seu indistincte obscure pilosis). Corpore subtus pedibusque nigris, nitidis, glabris. Prosterno lato ac brevi, ad apicem dilatato. Segmento anali apice linea profunda marginato. Unguiculis parvis, dentatis.

Patria: Singapore (*Baker*). Long. 2.8 mm. Lat. 1.8 mm.

Rather dark brassy colored, with a feeble olivaceous luster; the hairless parts of elytra a little obscure. Body rather elongate, cuneiform, rather attenuate to apex. Head rather flattened on middle, with a rather feeble median impressed

line, eyes rather strongly prominent laterally, but not much exceeding anterior margins of prothorax. The two median post-oral pores are very approximate, as are the antennal cavities; they are approximated in such a way that the epistome is very narrow between them. Prothorax wide, with nearly parallel basal portion of sides, anteriorly very strongly rounded with rather prominent anterior angles. Entire surface covered with a very fine, silky, white pilosity, which is rather unequal. Sculpture consists of the sides of circles. Scutellum small, triangular, and hairless. Elytra rather long, rather strongly attenuate to apex, with a fine, distinct humeral carina, with rather prominent, hairless shoulders; entirely covered by a very fine, silky, white, serially disposed pilosity; only a large macula, common to both elytra, in the form of a lyre, is hairless and a little obscure. There is also one (sometimes two) small rounded preapical hairless space on elytra. The seemingly hairless spaces are in reality covered by fine, obscure, nearly invisible pilosity. Undersurface and legs black, hairless, shining.

The single type in the Baker collection bears the number 12624.

*Trachys* (subg. *Habroloma*) *speciosella* sp. nov. Plate 4, figs. 27, 33.

*Speciei conscripta* sp. nov. simillima ac ab ea praecipue, uti sequitur divergens: Forma simili, sed corpore multo minore, fronte multo latiore, capite brevior, cavitatibus antennarum minoribus, oculis acutius, sed minus longe productis, elytris similibus, unicoloribus, obscure aeneis, albopilosis, maculis irregularibus glabris. Corpore subtus similiter instructo. Maxime fronte multo latiore ac ad anticem minus attenuata ac elytrorum ornamentatione valde divergens.

Patria: Singapore (*Baker*). Long. 2.2 mm. Lat. 1.2 mm.

Very similar to *Trachys conscripta* sp. nov., but smaller; head shorter, eyes in the same line as anterior angles of prothorax; front wider than in *T. conscripta*, less attenuate anteriorly, the antennal grooves smaller; eyes more acutely but more shortly prominent. Elytra similar, but the ornamentation, which is very distinct and well separated from the hairless spaces in *T. conscripta*, is here confused, indistinct; elytra unequally covered by silky, white pilosity, with some irregular, hairless spaces. Undersurface as in *T. conscripta*.

A single specimen of this species is in the Baker collection.

*Trachys* (subg. *Habroloma*) *uniformata* sp. nov. Plate 4, fig. 34.

Aenea, satis robusta, satis convexa, cuneiformis, longe ovalis. Superficie tota pilis aureis aequaliter tecta. Carina humerali distincta. Capite haud prominulo, satis parvo, fronte in medio longitudinaliter impressa, poris postoralibus duo satis distantibus, epistomate satis lato, satis longo. Cavitatibus antennarum satis distantibus. Thorace lateribus ad anticem fortiter rotundatim-attenuatis, haud fortiter deplanatis, angulis anticis haud prominentibus, angulis posticis acutis. Elytris latitudine fere  $1\frac{1}{2}$  longioribus, apice satis late rotundatis, sub pilositate lutea satis rugulosis. Prosterno lato, brevi, ad apicem dilatato. Corpore subtus pedibusque nigris, glabris nitidis. Unguiculis parvis, dentatis, tarsis nigris.

Patria: Singapore (*Baker*). Long. 2.6 mm. Lat. 1.7 mm.

Rather robust, rather convex, elongate, cuneiform; apex of elytra rather widely rounded. Entire upper surface covered with a very equal, not dense, fine, thin, yellow or golden pilosity. Head rather small, with not prominent eyes, and with a feeble median impression; front rather narrow, the two postoral median pores rather distant; epistome rather long and rather wide. Antennal grooves rather distant. Prothorax rather convex, with only feebly flattened sides, on sides rather strongly and, in a rounded line, attenuate to anterior angles which are not prominent; posterior angles very acute. Elytra on entire upper surface brassy and pilose, the sculpture rather indistinct under the pilosity and rather rugose. Undersurface black, hairless, shining. Prosternum wide and very short, enlarged apically. Legs and antennæ black. Last ventral segment margined at tip with a deep, impressed line. Claws small, and with a distinct tooth.

The single type bears the number 12620.

*Trachys* (subg. *Habroloma*) *saundersiana* sp. nov. Plate 4, fig. 37.

Parva, nitida, nigro-aenea, satis convexa, cuneiformis. Superficie tota pube aequali subtili aurea tecta; scutello solum ac macula transversa ovali communi in elytrorum medio glabrata. Capite satis parvo, fronte in medio depressa, oculis haud prominulis; poris postoralibus duo mediis valde approximatis, epistomate tenui, restricto. Thorace in parte basali solum leviter, antice fortiter rotundatim attenuato, angulis anticis modice productis leviter impressis. Elytris satis longis, carina humerali

distincta, sculptura antice in parte humerali satis rugosa. Corpore subtus nigro, nitido, glabro, prosterno lato ac brevi, apice dilatato. Segmento anali apice linea, profunda, tenui, impressa marginato.

Patria: Borneo, Sandakan (*Baker*). Long. 2.8 mm. Lat. 1.5 mm.

Rather small, shining, of brassy black color; rather convex, cuneiform. Entire upper face covered with a fine, thin, golden, equal pilosity; only scutellum and a median, transverse, oval macula, common to both elytra, hairless (in reality covered with nearly invisible dark hairs). Head rather small; impressed in the middle, with not prominent eyes. The two median postoral pores very approximate; epistome very narrow. Prothorax wide, rather strongly rounded anteriorly, with a depression in anterior angles which are rather prominent and acute. Elytra with moderately prominent humeri, with a distinct, entire, fine carina. Sculpture rather rugose on anterior part. Prosternum very wide and short, enlarged apically. Under-surface black, hairless, shining. Claws small, with a fine tooth.

The single type, numbered 13793, is in the Baker collection.

*Trachys* (subg. *Habroloma*) *sandakana* sp. nov. Plate 4, fig. 31.

Viridi-aenea, satis nitida, corpore supra pilis luteis sparsis ac suberectis, in elytris subseriatim dispositis tecto; solum in elytris, ad suturam maculis duo (quattuor) albosericeis, paullo densioribus ornatis. Thorace in angulis anticis similiter ornato. Corpore elongato, satis plano. Capite curto, medio depresso, oculorum marginibus satis prominentibus, thoracis margines anteriores haud superante, epistomate satis lato, apice truncato, haud emarginato, poris mediis postoralibus distantibus. Thorace lateribus ad anticem attenuatis, in parte anteriori valde rotundatis ac lateribus anterioribus acute prominentibus. Margine anterior valde rotundatim emarginato. Scutello minutissimo, triangulari. Elytris subconicis, ad apicem fortiter attenuatis, latitudine circiter  $1\frac{1}{2}$  longioribus. Prosterno latissimo, dilatato ac curto, nitido. Corpore subtus pedibusque nigris, nitidis. Segmento anali apice linea profunda semilunari marginato.

Patria: Borneo, Sandakan (*Baker*). Long. 2.4 mm. Lat. 1.3 mm.

Rather slender, moderately convex, rather shining, of a greenish brassy color. Entire upper surface covered with fine, sparse, yellow hairs disposed on elytra in longitudinal series.



Near suture, on elytra, there are two (four) silky, white, more densely pilose spaces; anterior angles of prothorax are marked with similar maculæ. Head flattened and short, lateral margin with eyes strongly prominent, but not longer than anterior prominent angles of prothorax. Epistome rather wide, truncate to anterior angles; anterior part of sides strongly rotundate and angles prominent. Elytra nearly  $1\frac{1}{2}$  times as long as wide and strongly attenuate and rotundate to apex, with distinct, fine humeral carina. Elytral sculpture rather rugose and covered by the pilosity. Undersurface, antennæ, and legs hairless, shining, and black; prosternum very short and very wide, enlarged at tip; last ventral segment marginate at tip with a very fine, deep semilunar line.

The single specimen in the Baker collection is numbered 12634.

*Trachys* (subg. *Habroloma*) *singaporensis* sp. nov. Plate 4, fig. 35.

Affinitatis *T. lepidoptera* Kerremans, *amica* Kerremans, et *gentilis* Kerremans. Eadem forma ac colore, ab eis uti sequitur differens:

Colore ac forma speciei sumatrensi *lepidoptera* Kerremans maxime affinis, sed capite maiore, medio late, sed distinctius excavato, thorace multo latiore, angulis anterioribus multo magis prominentibus, lateribus multo fortius rotundatis, prosterno lato, uti apud *lepidopteram* ac forma simili, sed multo longiori. Epistomate brevi ac latissimo, antennarum cavitatibus valde distantibus.

A speciebus *amica* ac *gentilis* iam forma ac colore valde diffinis.

Patria: Singapore (*Baker*). Long. 3.3 mm. Lat. 2.2 mm.

This species resembles very much *T. lepidoptera* Kerremans from Sumatra, in color and size. *Trachys amica* and *T. gentilis* of the same author are also very similar.

Of the same color and size as *T. lepidoptera*. Head wider, with a very wide but more distinct median depression. Prothorax of much greater width, with more strongly prominent anterior angles, which are situated nearly in the same line as the anterior margins of eyes. Sides of prothorax more rounded and more strongly attenuate to anterior angles. Prosternum of a similar form but distinctly longer. Undersurface formed as in *T. lepidoptera*.

The two other species mentioned are distinctly different by their size and coloring. It is the one species of this group

with very wide and short epistome. It seems to be rather common, because there were several specimens in this collection. I have compared this species with the types and paratypes of the other species in my collection.

*Trachys* (subg. *Habroloma*) *philippinensis* Fisher. Plate 4, fig. 30.

I have seen only a single specimen of this species, coming from Dapitan, Mindanao (*Baker*). This species is a good example of the forms with rather wide and short epistome and with distant median postoral pores.

*Trachys* (subg. *Habroloma*) *bakeriana* sp. nov. Plate 4, fig. 36.

Parva, satis convexa, cuneiformis, postice ovata, corpore speciei *uniformata* sp. nov. affinis. Superficie satis inaequaliter, subtiliter aureo pilosa, in elytrorum parte praeapicali fasciis duobus transversis satis indistinctis ornata. Aeneo nigra, satis nitida. Capite medio late, haud profunde impresso, oculis haud prominentibus, poris mediis postoralibus distantibus, epistomate brevi ac lato. Antennarum cavitatibus distantibus. Thorace lateribus haud fortiter deplanatis, in angulis anterioribus impressis, lateribus ad anticem satis fortiter rotundatim attenuatis, angulis anticis satis prominentibus, acutis, angulis posticis acutis. Prosterno brevi, lato, ad apicem dilatato. Elytris carina humerali distincta. Corpore subtus pedibusque nigris, fere glabris, margine segmentis analis apice linea profunda impressa marginato.

Patria: Borneo, Sandakan (*Baker*). Long. 2.9 mm. Lat. 1.7 mm.

Rather small, rather convex, cuneiform, rather ovate near apex. Resembles rather strongly *T. uniformata* sp. nov. Entire upper surface covered with a rather unequal, fine, golden, thin pilosity; on apical half of elytra with two transverse, straight, rather indistinct white fasciae. Black with a brassy luster. Head in middle rather widely but not deeply impressed. Eyes not prominent. The two median postoral pores are strongly distant; epistome short and wide. Prothorax wide, rather convex, with only feebly flattened sides, with an impression in anterior angles which are rather prominent and acute. Surface of prothorax rather unequally pilose. Elytra generally formed as in *T. uniformata*, with fine, entire carina. Under-surface black, shining, nearly hairless. Prosternum very short and wide, dilated apically. Last ventral segment entirely margined at tip with a fine, deep, impressed semicircular line. Legs

and antennæ black, tarsi black, claws small, with a distinct, fine tooth.

The two specimens in the Baker collection were numbered 12636 and 13797.

*Trachys* (subg. *Habroloma*) *dajakorum* sp. nov. Plate 4, figs. 28, 29.

Nigra, nitida, elongata. Corpore supra sparsim, satis inaequaliter pube molli, tenui, grisea tecto; pilositate hac in elytris fascias duo transversales satis irregulares formante. Capite satis magno, lateribus oculorum (desuper observatis) rotundatis, oculis haud prominentibus, poris postoralibus lateralibus (in figura "l") cum illis mediis ("m") transverse conjunctis. Epistomate satis attenuato. Thorace lateribus postice fere parallelis, antice valde rotundatis, angulis anticis acutis, sed haud prominulis, margine thoracis anteriori valde rotundatim emarginato; thoracis superficie modice convexa, prope angulos anteriores impressione rotundata satis profunda; superficie nitida, ante basim ac ad latera sculptura tenuissima circulari. Scutello parvo triangulari. Elytris latitudine fere  $1\frac{1}{2}$  longioribus, ad apicem satis fortiter attenuatis ac ibi rotundatis, carina tenui humerali distincta. Sculptura satis rugosa. Prosterno curto ac latissimo. Corpore subtus pedibusque nigris, nitidis, glabris. Segmento anali margine exteriori linea impressa profunda marginato.

Patria: Borneo, Sandakan (*Baker*). Long. 2.6 mm. Lat. 1.5 mm.

Black and shining. Elongate; entire upper surface covered with a fine, thin, gray, rather unequal pilosity, which makes two wide, transverse, not very dense fasciæ on the elytra. Head rather large, inner margins of eyes (observed from above) rotundate, not prominent; front rather wide, with a median impression, the two postoral lateral pores (in the figure, *l*) and the two median pores (*m*) united by a deep transverse impression. Epistome rather narrow. Prothorax nearly parallel on basal part, anteriorly strongly rotundate, anterior angles not prominent; anterior margins rather strongly and widely emarginate. Prosternum very wide and very short. Elytra nearly 1.5 times as long as wide, rather strongly attenuate to apex, where they are together rounded. A distinct entire humeral carina is developed. Undersurface and legs black, shining, hairless. Anal segment on exterior sides entirely margined with a fine, impressed, semicircular line. Claws small, with a distinct tooth.

I have seen only a single specimen of this species, numbered 12637 in the Baker collection.

*Trachys* (subg. *Habroloma*) *praora* sp. nov. Plate 4, fig. 38.

Speciei *miana* sp. nov. valde affinis, eodem colore ac pilositate, atque solum, uti sequitur, differens:

Multo lator, maior, robustior. Pedibus distincte multo longioribus, oculis haud fortiter, sed distincte prominentibus. Angulis anterioribus thoracis multo minus prominentibus. Thoracis angulis basalibus haud prominentibus; thorace distincte latiore, ad angulos anteriores similiter impresso. Capite minus lato; epistomate minus dilatato, brevi. Prosterno lato ac brevi, sed distincte longiori. Elytris multo latoribus ac magis deplanatis.

Patria: Central Borneo (*Boháč*; coll. *Obenberger*). Long. 3.2 mm. Lat. 2 mm.

This species resembles *T. miana* sp. nov. very much and can be easily distinguished by the following characters:

Larger, more robust, but more flattened. Color and pilosity generally similar. Head less wide, more distinctly depressed; eyes distinctly prominent. Prothorax wider, more deeply emarginate at anterior margin; basal angles not prolonged or prominent, acute. Elytra much wider, more flattened. Prosternal process similar, wide, but distinctly longer. Legs very distinctly longer.

I have in my collection a single specimen of this species.

*Trachys* (subg. *Habroloma*) *miana* sp. nov. Plate 4, fig. 39.

Coeruleo-violacea, satis obscura, forma speciei *Trachys amica* Kerremans (Sumatra) affinis.

Capite lato, medio late impresso, oculis haud prominulis, oculorum marginibus interioribus acutis. Fronte lata, sparse albopilosa poris postoralibus duo mediis valde distantibus, epistomate lato ac brevi. Thorace lato, sparse ac irregulariter albopiloso, antice valde emarginato, angulis basalibus acutis, prominentibus, anticis acutis, modice prominulis. Lateribus fortiter rotundatim attenuatis. Thorace ad angulos anticos profunde impresso. Elytris haud fortiter nitentibus, satis longis, carinatis, fasciis nonnullis valde flexuosus pilorum albosericorum ornatis.

Patria: Borneo centralis (*Boháč* leg.; coll. *Obenberger*). Long. 2.9 mm. Lat. 1.8 mm.



Head wide, with small, not prominent eyes; in the middle with a distinct, very wide depression; front wide, irregularly, finely, sparsely covered with a silky, white pilosity; the two postoral median pores very distant; epistome very short and wide. Prothorax wide, with deep emargination on anterior margin; anterior angles acute and rather strongly prominent; basal angles very acute, very distinctly prominent; near anterior angles is a deep impression. Prosternum very short and wide, impressed in the middle and enlarged apically. Elytra of the form of *T. amica*, covered with some very flexuous transverse fasciæ, which are rather discontinuous on anterior half and which consist of fine, thin, silky, white pilosity. Humeral carina entire, distinct. The seemingly hairless spaces of the surface are in reality covered with a very dark and rather dense, obscure, feebly distinct pilosity. Undersurface and legs hairless and shining, black. Legs rather long. Last ventral segment entirely margined at tip by a deep, impressed, semi-circular line.

*Trachys* (s. str.) *picta* Fisher. Plate 1, fig. 31.

The single specimen of *Trachys picta* in the Baker collection, numbered 13801, comes from Dapitan, Mindanao. This species is very remarkable for the very short and wide prosternum and for the form of the epistome; this is posteriorly separated from the front by a small transverse carina; it is very short and wide; postoral pores distant.

*Trachys* (s. str.) *subaeneella* sp. nov. Plate 1, fig. 27.

Nigra, nitida, paulo violaceo nitens. Corpore satis deplanato, haud robusto. Capite lato, luteo regulariter piloso, angulis interioribus oculorum acutis. Fronte lata, medio late impressa, poris postoralibus satis approximatis, epistomate tenui. Thorace lato, antice valde emarginato, lateribus ad anticem haud fortiter rotundatis; superficie tota aequaliter pilosa, pilis his medio luteis, lateribus albidis, tenuibus. Scutello parvo triangulari. Elytris latitudine fere  $1\frac{1}{2}$  longioribus, satis plane convexis, nitidis, humeris parum elevatis; ad humeros latitudine maxima, ad apicem primo fere subparallelis, dein modice rotundatim attenuatis; nitidis macula pilosa triangulari scutellari lutea, fascia praeapicali alba ac apice albo ornatis. Macula hac lutea extus etiam pilis aliquot albidis marginato. Superficie alio pilis nigris, fere invisibilibus tecta. Prosterno satis lato subparallelo, apice rotun-

dato, marginato. Corpore subtus pedibusque nigris, glabris. Palpis ac tarsisque subtus testaceis, unguiculis parvis, distincte dentatis.

Patria: Borneo, Sandakan (*Baker*). Long. 2.7 mm. Lat. 1.6 mm.

Rather elongate, moderately convex, not robust, black, shining. Head wide, with a fine, equal, yellow pilosity. Postoral pores rather approximate; therefore the epistome is rather narrow. Prothorax wide, rather convex, with strongly emarginate anterior margin, sides moderately rounded to apex, entirely covered with a fine, equal pilosity which is white on sides and yellow on the large median part. Scutellum small and triangular. Elytra black, shining, nearly 1.5 times as long as wide, the greatest width near the humeri, then moderately, regularly rounded to apex; surface adorned with a pilose ornamentation which forms a long, triangular, postscutellar yellow macula on suture, one transverse postmedian fascia and an apical fascia, both of silky, white pilosity; sutural yellow macula exteriorly marked with some white hairs. Prosternum parallel, rather wide, rounded at tip, and marginate. Under-surface and legs black, hairless, shining; palpi and tarsi testaceous. Claws finely toothed, small.

There were two specimens (numbered 12635 and 13796) in the Baker collection. Their ornamentation and the form of the head and prosternum distinguish them easily from the other similar species.

*Trachys* (s. str.) *scriptella* sp. nov. Plate 1, fig. 28.

Speciei *subaeneella* sp. nov. valde affinis, maior, ad apicem magis attenuata, oculis minoribus, eodem colore, elytris aliter pilosis: pilis luteis fascias duo lateraliter satis indistinctas ac in sutura late conjunctas formantibus; lateribus pube alba admixta. Fronte similiter formata, solum latiore, ac paullo minus fortiter canaliculata, marginibus interioribus oculorum minus acutis. Abdomine robustiore, prosterno satis lato, subparallelo, marginato. Angulis anterioribus thoracis magis prominentibus. Pedibus similiter quam apud speciem *subaeneella* formatis.

Patria: Singapore (*Baker*). Long. 2.9 mm. Lat. 1.7 mm.

This species resembles very much *Trachys subaeneella* sp. nov., and differs only in the following characters: Head a little wider; front similar but wider, less impressed in the middle; inner margin of eyes less acute; prothorax of a similar form,

but the anterior angles more prominent and more acute; prosternum nearly parallel, rounded at tip, and margined laterally. Elytra more robust, more attenuate laterally to apex; the ornamentation entirely different, being composed of two laterally indistinct transverse yellow fasciæ on basal part of elytra, on suture widely joined together, on sides joined to a silky, white macula, all pilose spaces covered with fine, thin hairs. Abdomen and undersurface similar to *T. subaeneella*.

In the Baker collection there were only two specimens of this species: One was numbered 12619.

*Trachys* (s. str.) *cupripyga* H. Deyrolle. Plate 1, fig. 25.

A species with a very wide geographic distribution. The specimen before me, numbered 11623, was taken at Singapore (*Baker*).

*Trachys* (s. str.) *fisheri* sp. nov. Plate 1, fig. 30.

Nigro-violacea, parum nitida; corpore satis elongato ac supra satis depresso. Capite lato, satis robusto, oculis haud prominulis; fronte lata in medio satis fortiter impressa, poris postoralibus satis distantibus, nec non usque ad latera positis, epistomate brevi ac lato. Thorace minute sculpto, punctis minutis sparsis ornato, uti caput sparse albopubescente. Scutello minimo, fere invisibili. Elytris longitudine latitudinem  $1\frac{2}{3}$  superantibus, usque ad medium fere subparallelis, dein ad apicem rotundatim attenuatis, minute sculptis, satis pilosis, fasciis tenuibus valde sinuatis, satis interruptis pilorum albosericeorum ornatis. Corpore subtus, pedibus antennisque nigris, nitidis, glabris; palpis ac tarsis brunnescentibus. Prosterno lateribus marginatis, haud lato, ad apicem dilatato ac ibi rotundato.

Patria: Mindanao, Iligan et Dapitan (*Baker*). Long. 3.1 mm. Lat. 1.7 mm.

Rather robust, feebly shining, rather long, and somewhat depressed. Color similar to *Trachys miunta* Linnæus, black with violaceous luster. Head rather robust and wide, with simple eyes; inner margins of eyes not acute. Front in middle rather deeply longitudinally impressed, the two postoral pores large and rather distant, but a little distant from lateral margin of front. Epistome short and wide. Antennæ black. Prothorax wide, with rather deep emarginate anterior margin, anterior angles not prominent, and with sides regularly attenuate in a rounded line to anterior angles. Surface rather finely sculptured, but the

sculpture rather indistinct under the pilosity, only some minute punctures perceptible on sides. Head and pronotum sparsely covered with fine, silky, white pilosity. Elytra about 1.4 times as long as their joint width, nearly parallel-sided to middle, and then rounded to apex; rather feebly shining, rather feebly convex, with moderately prominent shoulders; covered with a pilosity which forms some very flexuous, narrow, undulate, often interrupted, transverse, silky, white fasciæ. The hairless shining surface is in reality covered with a very indistinct and nearly invisible dark pilosity. Scutellum indistinct, very small. Prosternum a little enlarged in apical part and rounded at tip, emarginate, rather narrow. Undersurface black and hairless, palpi and tarsi brown.

Dedicated to Mr. W. S. Fisher, who has published a paper on the Philippine Buprestidæ. There were only two specimens of this species in the Baker collection. The one from Iligan is numbered 13799.

*Trachys* (s. str.) *isolata* sp. nov. Plate 1, fig. 26.

Broncea, satis nitida, satis convexa. Capite lato, in medio longitudinaliter impresso, epistomate satis lato, poris postoralibus satis distantibus. Antennis nigris. Thorace lato, nitido, glabro, sculptura indistincta circulorum parvorum ac superficialium. Lateribus ad anticem fere in linea recta valde attenuatis, postice brevissime subparallelis, angulis posticis satis acutis. Scutello parvo triangulari distincto. Elytris satis irregulariter ac satis fortiter, punctatis, fasciis aliquot undulatis, valde indistinctis pilorum albosericeorum. Elytrorum forma haud robusta, humeris parum prominentibus, elytris ab humeris ad apicem subsinuatim ac rotundatim attenuatis ac apice conjunctim rotundatis. Corpore subtus pedibusque nigris. Prosterno attenuato, subparallelo, apice parum, sed distincte dilatato, lateribus subtilissime marginatis. Unguiculis minutis ac dentatis, tarsis nigris.

Patria: Penang Island (*Baker*). Long. 2.5 mm. Lat. 1.3 mm.

Small, brassy, rather shining. Head wide; front above, at upper margins of eyes, wider than length of an eye. Postoral pores rather distant, epistome rather wide. Antennæ black. Prothorax wide, rather shining, with a very fine, only feebly distinct sculpture, consisting of fine circles; hairless. Scutellum very small and triangular. Elytra not robust, the greatest width at shoulders, then sinuate and attenuate to apex, where they are



conjointly rounded; some discontinued and feebly indicated undulated fasciæ of silky, white hairs on surface; sculpture consists of rather superficial and rather large irregular puncturation, without distinct shagreening or striæ. Prosternum narrow and slightly, distinctly enlarged at tip, laterally finely marginate. Claws feeble, with a distinct tooth. Legs with tarsi and undersurface black, hairless.

In the Baker collection there was a single specimen of the present species, numbered 12622.

*Trachys* (s. str.) *eschscholtzi* sp. nov. Plate 1, fig. 32.

Satis elongata, subconvexa, ovalis, haud robusta, supra aenea, satis nitens, superficie tota pube aurea ac huc et ubi brunnescente tecta; solum in thoracis medio, ante scutellum ac thoracis lateribus pilis nonnullis albidis ornatis. Elytris maculis similibus subtransversis pilorum albosericorum quattuor (octo) ornatis. Pilis mollibus ac tenuibus. Capite lato, magno, in medio late depresso; poris postoralibus valde distantibus, epistomate curto ac lato alutaceo. Thorace satis lato, lateribus ad anticem fere recte attenuatis, angulis posticis haud prolongatis, angulis anticis modestis, margine anteriori latissime emarginato. Scutello minutissimo, triangulari. Elytris latitudine fere  $1\frac{1}{2}$  longioribus, humeris leviter prominulis, elytrorum lateribus usque ad medium parum, dein magis fortiter ac rotundatim attenuatis, apice conjunctim rotundatis, modice convexis, satis nitentibus, dense pilosis. Prosterno satis lato, apice paullo dilatato ac rotundato, marginato, nitente. Unguiculis parvis, late dentatis. Corpore subtus, antennis pedibusque nigris, palpis ac tarsis testaceis. Impressionem laterali præsternali parva.

Patria: Borneo, Sandakan (*Baker*). Long. 2.6 mm. Lat. 1.7 mm.

Rather small, ovoid, rather elongate, rather feebly convex. Entire upper surface covered with a dense, fine, equal, yellow, in some places brownish pilosity. There are some spaces covered with similar but silky, white hairs. In the middle (before scutellum) and on sides of prothorax, are four (eight) transverse, not too distinct maculæ along suture on elytra. Head very wide and rather robust; eyes not prominent, rather small; postoral pores very distant; epistome short, wide, shagreened. Prothorax short and wide, laterally rather strongly and, in a nearly straight line, attenuate to apex; anterior margin very widely emarginate. Scutellum very small, triangular. Elytra about 1.5 times as long as wide, rather feebly convex, rather shining; sculpture

under the pilosity indistinct; sides very feebly (to the middle), then more strongly and in a rotundate line attenuate to apex, where they are rather widely rounded. Prosternum rather wide, a little enlarged in apical part and rounded at marginate tip. Entire undersurface, antennæ, and legs black, shining, hairless; palpi and tarsi testaceous. Claws black, small, and with a wide tooth.

A single specimen numbered 13795 is in the Baker collection.

*Trachys* (s. str.) *formosana* Kerremans.

I have compared the next species with two paratypes of the present species in my own collection, coming from Formosa (*Sauter*).

*Trachys* (s. str.) *dapitana* sp. nov. Plate 1, fig. 29.

Violaceo-aenea, satis nitida; capite ac thorace satis inaequaliter luteo piloso, elytris inaequaliter, haud dense luteo pilosis cum aliquot pilis albis intermixtis. Capite satis lato, in medio satis fortiter impresso, poris postoralibus lateralibus satis distantibus, epistomate satis lato. Antennis nigris. Oculis satis parvis, haud prominulis. Thorace angulis anticis haud productis, lateraliter ad anticem arcuatim satis fortiter attenuato, angulis posticis haud prominentibus, superficie satis convexa, nitida. Scutello minutissimo triangulari. Elytris haud robustis, satis plane convexas, longitudine latitudinem  $1\frac{1}{2}$  superante, usque ad medium insensibiliter, dein ad apicem rotundatim attenuatis. Sculptura elytrorum satis superficiali, punctis aliquot perminutis intermixtis. Prosterno subparallelo, satis lato, marginato. Corpore subtus nigro, glabro, nitido. Palpis ac tarsis subtus rufotestaceis.

Patria: Mindanao, Dapitan (*Baker*). Long. 3 mm. Lat. 1.5 mm.

Rather elongate and rather depressed. Brassy with a violaceous luster, rather shining, head and prothorax covered with unequal, yellow pilosity. Head rather wide, with a rather strong median impression; the two postoral lateral pores rather distant, epistome rather wide. Antennæ and legs black. Eyes rather small and not prominent. Prothorax rather wide, anterior angles not prominent; surface rather shining and rather convex. Scutellum very small and triangular. Elytra rather elongate, nearly 1.5 times longer than wide, in anterior part nearly parallel-sided, then in a rounded line attenuate to apex; covered with unequal, not dense, simple pilosity, consisting of yellow and some intermixed white hairs; sculpture fine, surface rather shin-

ing; between the single punctures appear also extremely fine punctures. Prosternum rather wide and parallel, with marginate sides. Undersurface black and shining, hairless, palpi and tarsi red testaceous.

The single specimen before me is numbered 13800.

#### Genus *PARATRACHYS* E. Saunders

This genus seems to be nearer to *Ianthe* than to the other genera occurring in the Oriental Region. The species of this genus are always rather rare. Nearly all are characterized by the peculiar striate sculpture of the elytra and by different radially pilose ornamentations. The present species resembles a little *P. pilifrons* Kerremans, which I have in my collection from Sumatra.

In the Baker collection there is a single specimen of a new species of this genus.

*Paratrachys bakeri* sp. nov. Plate 1, fig. 8.

Niger, satis nitidus, ovalis, in  $\frac{2}{3}$  anterioribus corporis latitudinem maximam attingens, postice rotundatus. Capite lato ac plano, dense punctato ac sparse albosericeo. Thorace convexo, lato, dense punctato, nitido, lateribus ad anticem oblique attenuatis, margine anteriori late circulatim emarginato. Elytris longe ovalibus, satis latis, longitudine latitudinem solum  $\frac{1}{3}$  superante, in parte humerali leviter dilatatis, ad apicem valde rotundatis, apicibus satis late conjunctim rotundatis. Elytrorum superficie dense oblique strigoso striata. Elytrorum ac thoracis superficie tota obscure erecte pilosa; inter pilositatem hanc ornameto pilorum albosericeorum, quod ellipsam regularem efficit, cujus pars superior (semicircularis) in thorace, pars inferior in elytris posita est, ellipsae huius pili dense ac radialiter dispositi sunt; in elytrorum parte apicali, inter illam ellipsam ac apicem vitta similis, semielliptica, similiter instructa posita est. Scutello triangulari, parvo, laevi. Prosterno lato, lateribus paulo dilatatis abdomine dense ac subtiliter albosericeo. Corpore subtus pedibusque nigris.

Patria: Singapore (*Baker*). Long. 3 mm. Lat. 2.1 mm.

Black, rather shining, oval; greatest width on two-fifths of the length of the entire body. Head rather flattened, rather densely and finely punctured, covered with fine, sparse, silky, white pubescence. Prothorax convex and with margins in an even line with those of elytra; rather densely punctured and rather shining. Elytra rather convex, as in some *Pachyschelus*

species, one-fifth longer than wide, conjointly rounded at apex; surface finely, densely, obliquely striate, the striæ sharp and strigose. Entire surface of prothorax and elytra covered with pilosity which is dark and black on the seemingly glabrous spaces, and the ornamentation consists of fine and rather adherent radial, silky, white pilosity. The white ornamentation forms an elongate ellipse common to both elytra, one part on prothorax, the other on elytra; between this ellipse (which reaches behind middle of elytra) and apex is a similar half-elliptical vitta, which is more attenuate to the humeri. Prosternum wide and a little before apex. Abdomen covered with very fine, dense, silky, white pilosity. Undersurface and legs black.

This is one of the most interesting species sent to me by Baker. It is very different from all species known to me. The single specimen (type) has the number 12607.

#### Genus *PACHYSCHELUS* Solier

Most described species of this genus inhabit South America. Only three are found north of Mexico. A single species is known from Madagascar, another from Africa, and one from the Palearctic Region (Algeria). Only very few have been described from the Oriental Region, and most of them occur on the large islands. Recently I received one species from Tonkin (*Pachyschelus bedeli* Obenberger). The males of this genus are marked with some peculiar little combs on the apical margin of the anal segment. Some of them, belonging to the Central American forms, were figured by Waterhouse.<sup>10</sup> The combs are in most cases the only reliable characters on which to divide some forms, which are often extremely similar to each other. It is peculiar that the two forms sent to me resemble more the neotropical species than they do *P. wallacei* H. Deyrolle.

*Pachyschelus orientalis* sp. nov. Plate 1, fig. 10.

Speciei *singaporensis* sp. nov. simillimus ac solum ita diffinis:

Corpore supra minus nitido, elytris coeruleis, thorace nigro, lateribus leviter aeneis, corpore subtus nigroaeneo. Elytris minus latis, plus ovalibus, thorace lateribus minus rotundatis, angulis posticis minus prominulis. Capite aurato. Elytris distinctius punctato striatis, paulo magis convexis, impressione laterali minori; fronte multo latiore ac brevior. Segmento anali medio fortiter impresso, lateribus impressionibus obliquis marginatis.

<sup>10</sup> Biologia Centrali-Americana.



*Patria*: Singapore (*Baker*). Long. 2.5 mm. Lat. 1.8 mm.

This species is very similar to *P. singaporensis* sp. nov. It differs only in being smaller and narrower; in the wider and shorter front; the smaller lateral impression of the elytra; and the more distinctly indicated serial puncturation on the elytra.

Head golden, prothorax black with slightly bronzed sides, elytra blue, less shining than in *P. singaporensis*. Last ventral segment (male and female) with a deep median impression and with linear oblique impressions on each side.

*Pachyschelus singaporensis* sp. nov. Plate 1, fig. 9.

Latus, latitudinem maximam in medio corporis attingens. Supra cyaneus, nitidus, glabratus; capite satis lato, medio leviter impresso, antice aurato, glabro. Poris frontalibus lateralibus impressione transversa acuta lineari conjunctis ac epistomate ita separato. Prothorace longitudine fere 4 latiori, lateribus fortiter rotundatis, angulis posticis acutis; scutello lato, magno. Elytris post humeris latissimis, ad anticem fortiter (in una linea cum thorace) rotundatis, ad apicem satis longe rotundatim attenuatis, apicibus paullo oblique rotundatis; posthumeris lateribus impressis. Superficie glabra, nitida, punctis nonnullis subseriatim dispositis, fere indistinctis. Corpore subtus pedibusque nigris, nitidis. Segmento anali lateribus ac medio impresso. ♂ segmento anali apice pectina minuto octodentato, dentis his in medio angulo maiori formi  $\wedge$  in partes duo divisus.

*Patria*: Singapore (*Baker*). Long. 3 mm. Lat. 2.2 mm.

Blue, shining; undersurface black, shining. Hairless; very wide; the greatest width in the middle of length. Head anteriorly golden, rather wide, with a distinct median impression in the middle. Prothorax very wide, shining, with some punctures laterally; sides very strongly rounded, with acute posterior angles. Elytra wide, rather convex, with a lateral impression on each side behind humeri, with some traces of fine longitudinal puncturation. Undersurface shining, the anal segment impressed in middle and on sides. Last ventral segment of male adorned on apex with a little comb of eight teeth (See Plate 1, fig. 9), which is divided in the middle by a deeper median incision.

The present species resembles very much some Brazilian forms. Also, the anal markings of the male are similar to those of American forms. I have seen only one specimen of this peculiar species; the type is in the Baker collection, numbered 12625.



## ILLUSTRATIONS

### PLATE 1

- FIG. 1. *Aphanisticus corniceps* sp. nov.  
 2. *Aphanisticus perakensis* sp. nov.  
 3. *Aphanisticus peninsulae* sp. nov.  
 4. *Aphanisticus bakeri* Fisher.  
 5. *Aphanisticus dapitani* sp. nov.  
 6. *Aphanisticus sandakanus* sp. nov.  
 7. *Aphanisticus bohaci* sp. nov.  
 8. *Paratrachys bakeri* sp. nov.; a, head, showing episternal emargination, e.  
 9. *Pachyschelus singaporensis* sp. nov.; a, head, showing epistomal emargination, e; b, anal comb of male.  
 10. *Pachyschelus orientalis* sp. nov.; a, head, showing epistomal emargination, e.  
 11. *Endelus belial* sp. nov.  
 12. *Endelus aphanisticinus* sp. nov.  
 13. *Endelus bakerianus* sp. nov.  
 14. *Endelus borneensis* sp. nov.  
 15. *Meliboeus pravus* sp. nov.  
 16. *Meliboeus carbonicolor* sp. nov.  
 17. *Meliboeus dapitanus* sp. nov.  
 18. *Sambus sandakanus* sp. nov.  
 19. *Sambus bakerianus* sp. nov.  
 20. *Sambus maquilangi* sp. nov.  
 21. *Sambus delicatulus* sp. nov.  
 22. *Sambus adonis* sp. nov.  
 23. *Sambus faustinus* sp. nov.  
 24. *Sambus philippinarum* sp. nov.  
 25. *Trachys cupripyga* H. Deyrolle; a, prosternal process.  
 26. *Trachys isolata* sp. nov.; a, prosternal process.  
 27. *Trachys subaeneella* sp. nov.; a, prosternal process.  
 28. *Trachys scriptella* sp. nov.; a, prosternal process.  
 29. *Trachys dapitana* sp. nov.; a, prosternal process.  
 30. *Trachys fisheri* sp. nov.; a, prosternal process.  
 31. *Trachys picta* Fisher; a, prosternal process.  
 32. *Trachys eschscholtzi* sp. nov.; a, prosternal process.

### PLATE 2

- FIG. 1. *Agrilus exchusus* sp. nov.  
 2. *Agrilus cannullus* sp. nov.  
 3. *Agrilus albocinctus* Fisher.  
 4. *Agrilus harlequin* sp. nov.  
 5. *Agrilus spinellifer* sp. nov.

6. *Agrilus perniciosellus* sp. nov.
7. *Agrilus oneratus* sp. nov.
8. *Agrilus luctuosellus* sp. nov.
9. *Agrilus intrusus* sp. nov.
10. *Agrilus pilistoma* sp. nov.
11. *Agrilus agrestis* H. Deyrolle.
12. *Agrilus nigrocinctus* E. Saunders.
13. *Agrilus insularis* H. Deyrolle.
14. *Agrilus inconstans* Fisher.
15. *Agrilus albogaster* H. Deyrolle.
16. *Agrilus inquinatus* E. Saunders.
17. *Agrilus fisheri* nom. nov.
18. *Agrilus subvittatus* Fisher.
19. *Agrilus atratulus* sp. nov.
20. *Agrilus croceisquamis* sp. nov.
21. *Agrilus manilensis* Fisher.
22. *Agrilus viridicolor* sp. nov.
23. *Agrilus encaustus* sp. nov.
24. *Agrilus zamboangensis* Fisher.
25. *Agrilus subpubescens* Fisher.
26. *Agrilus aureocoeruleans* sp. nov.
27. *Agrilus pterochlorus* sp. nov.
28. *Agrilus orientis* sp. nov.
29. *Agrilus operosus* sp. nov.
30. *Agrilus saundersianus* sp. nov.
31. *Agrilus tardulus* sp. nov.
32. *Agrilus ludificator* sp. nov.
33. *Agrilus pictithorax* sp. nov.
34. *Agrilus simillipictus* sp. nov.
35. *Agrilus carinellifer* sp. nov.
36. *Agrilus optatus* sp. nov.
37. *Agrilus sandakanus* sp. nov.
38. *Agrilus xenius* sp. nov.
39. *Agrilus dajakorum* sp. nov.; a, processes of the carina of last ventral segment.
40. *Agrilus purpurifrons* H. Deyrolle.

## PLATE 3

- FIG. 1. *Agrilus singaporensis* sp. nov.  
2. *Agrilus falsulus* sp. nov.  
3. *Agrilus tristinus* sp. nov.  
4. *Agrilus pilipennis* sp. nov.  
5. *Agrilus uniformipubis* sp. nov.  
6. *Agrilus lazar* sp. nov.  
7. *Agrilus carinipennis* sp. nov.  
8. *Agrilus bidentellus* sp. nov.  
9. *Agrilus oppositus* sp. nov.  
10. *Agrilus perniciosus* H. Deyrolle.  
11. *Agrilus persolitarius* sp. nov.  
12. *Agrilus microtatus* sp. nov.  
13. *Agrilus kheiki* sp. nov.



14. *Agrilus piperi* Fisher.
15. *Agrilus acutus* Thunberg.
16. *Agrilus pterochlorus* sp. nov.; *oc*, oculi, the eyes; *o*, the mouth; *gl*, lobus gularis, prosternal lobe; *sm*, submarginal carina; *m*, marginal carina; *ph*, prehumeral carina; *ch*, lateral, cariniform margin of the humeri; *ce*, humeral carina of the elytra; *c*, hind coxa.
17. *Agrilus exclusus* sp. nov.; *ph*, prehumeral carina; *m*, marginal carina; *sm*, submarginal carina; *oc*, the eye; *ce*, elytral carina; *ep*, epipleura. Figures 17 to 44 indicate the positions of the thoracic carinæ in various species of the genus *Agrilus*; the names and relative positions of the carinæ are indicated by letters in fig. 17. The series of figures is continued on Plate 4, figs. 1 to 26.
18. *Agrilus cannuulus* sp. nov.
19. *Agrilus albocinctus* Fisher.
20. *Agrilus harlequin* sp. nov.
21. *Agrilus spinellifer* sp. nov.
22. *Agrilus perniciosellus* sp. nov.
23. *Agrilus oneratus* sp. nov.
24. *Agrilus luctuosellus* sp. nov.
25. *Agrilus intrusus* sp. nov.
26. *Agrilus pilistoma* sp. nov.
27. *Agrilus agrestis* H. Deyrolle.
28. *Agrilus nigrocinctus* E. Saunders.
29. *Agrilus inconstans* Fisher.
30. *Agrilus insularis* H. Deyrolle.
31. *Agrilus albogaster* H. Deyrolle.
32. *Agrilus inquinatus* E. Saunders.
33. *Agrilus fisheri* nom. nov. (=|| *fulvovittatus* Fisher).
34. *Agrilus subvittatus* Fisher.
35. *Agrilus kheili* sp. nov.
36. *Agrilus piperi* Fisher.
37. *Agrilus acutus* Thunberg.
38. *Agrilus sandakanus* sp. nov.
39. *Agrilus xenius* sp. nov.
40. *Agrilus dajakorum* sp. nov.
41. *Agrilus purpurifrons* H. Deyrolle.
42. *Agrilus singaporensis* sp. nov.
43. *Agrilus falsulus* sp. nov.
44. *Agrilus tristinus* sp. nov.

## PLATE 4

- FIG. 1. *Agrilus pilipennis* sp. nov.; *ph*, prehumeral carina; *m*, marginal carina; *sm*, submarginal carina; *oc*, eye; *ce*, elytral carina; *ep*, epipleura; *u*, claw. Figures 1 to 26 indicate the positions of the thoracic carinæ in various species of the genus *Agrilus*, a continuation from Plate 3; the names and relative positions of the carinæ are indicated in figs. 8 to 11.
2. *Agrilus uniformipubis* sp. nov.
  3. *Agrilus perniciosus* H. Deyrolle.

4. *Agrilus persolitarius* sp. nov.
5. *Agrilus microtatus* sp. nov.
6. *Agrilus oppositus* sp. nov.
7. *Agrilus bidentellus* sp. nov.
8. *Agrilus atratulus* sp. nov.
9. *Agrilus croceisquamis* sp. nov.
10. *Agrilus manilensis* Fisher.
11. *Agrilus carinipennis* sp. nov.
12. *Agrilus lazar* sp. nov.
13. *Agrilus viridicolor* sp. nov.
14. *Agrilus encaustus* sp. nov.
15. *Agrilus zamboangensis* Fisher.
16. *Agrilus subpubescens* Fisher.
17. *Agrilus aureocoerulans* sp. nov.
18. *Agrilus orientis* sp. nov.
19. *Agrilus operosus* sp. nov.
20. *Agrilus saundersianus* sp. nov.
21. *Agrilus tardulus* sp. nov.
22. *Agrilus ludificator* sp. nov.
23. *Agrilus pictithorax* sp. nov.
24. *Agrilus simillipictus* sp. nov.
25. *Agrilus carinellifer* sp. nov.
26. *Agrilus optatus* sp. nov.
27. *Trachys speciosella* sp. nov., head; *e*, epistome; *l*, lateral pores; *a*, antennal grooves; *m*, middle pori.
28. *Trachys dajakorum* sp. nov., head; *e*, epistome; *l*, lateral pores; *a*, antennal grooves; *m*, middle pores; *g*, gular processes.
29. *Trachys dajakorum* sp. nov.
30. *Trachys philippinensis* Fisher.
31. *Trachys sandakana* sp. nov.
32. *Trachys conscripta* sp. nov.
33. *Trachys speciosella* sp. nov.
34. *Trachys uniformata* sp. nov.
35. *Trachys singaporensis* sp. nov.
36. *Trachys bakeriana* sp. nov.
37. *Trachys saundersiana* sp. nov.
38. *Trachys praora* sp. nov.
39. *Trachys miana* sp. nov.

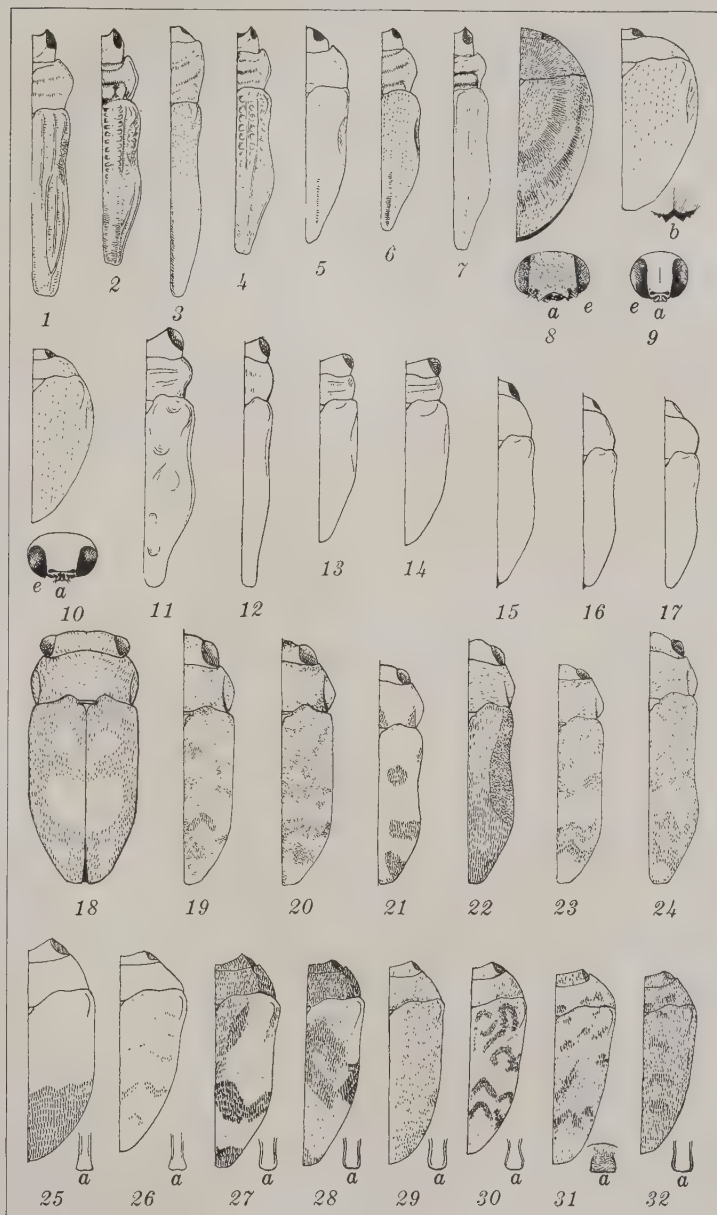


PLATE 1.





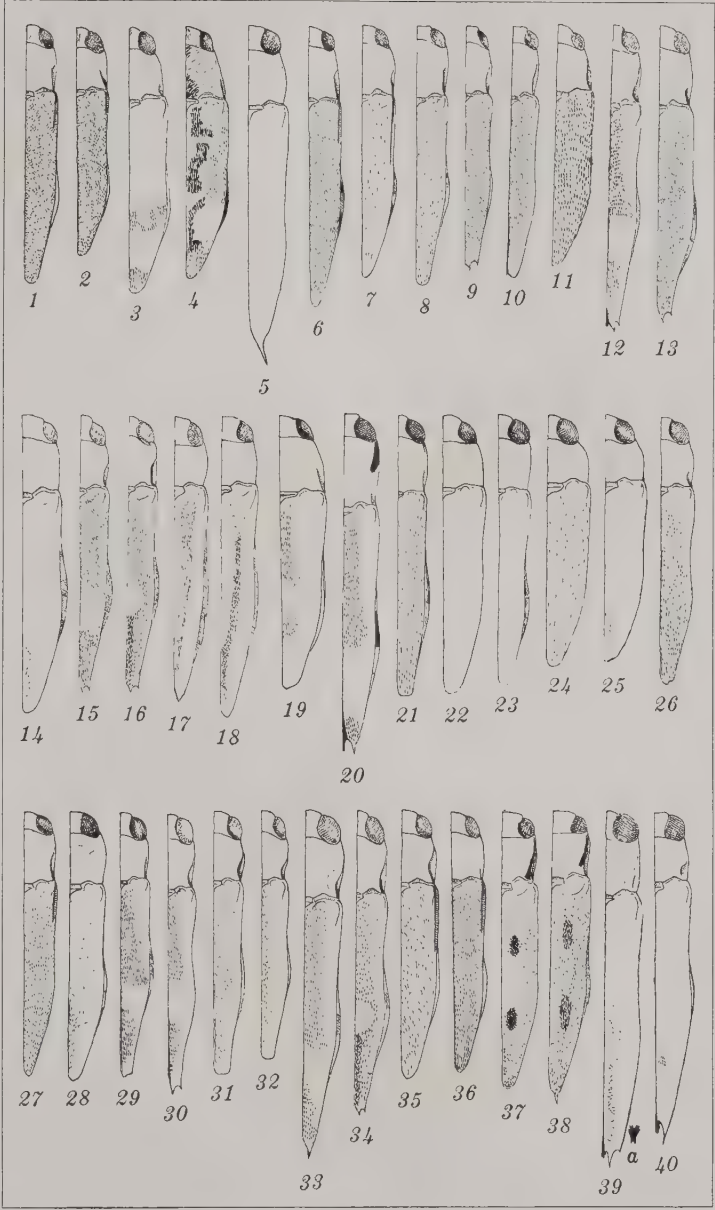


PLATE 2.



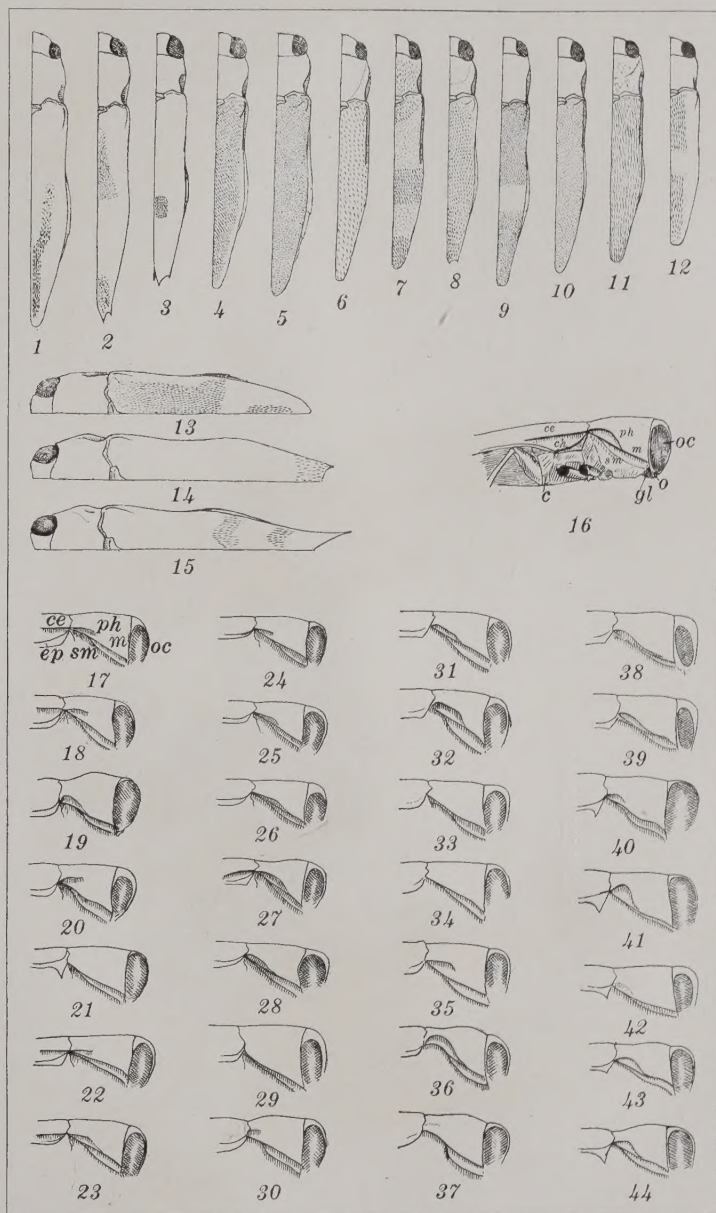


PLATE 3.





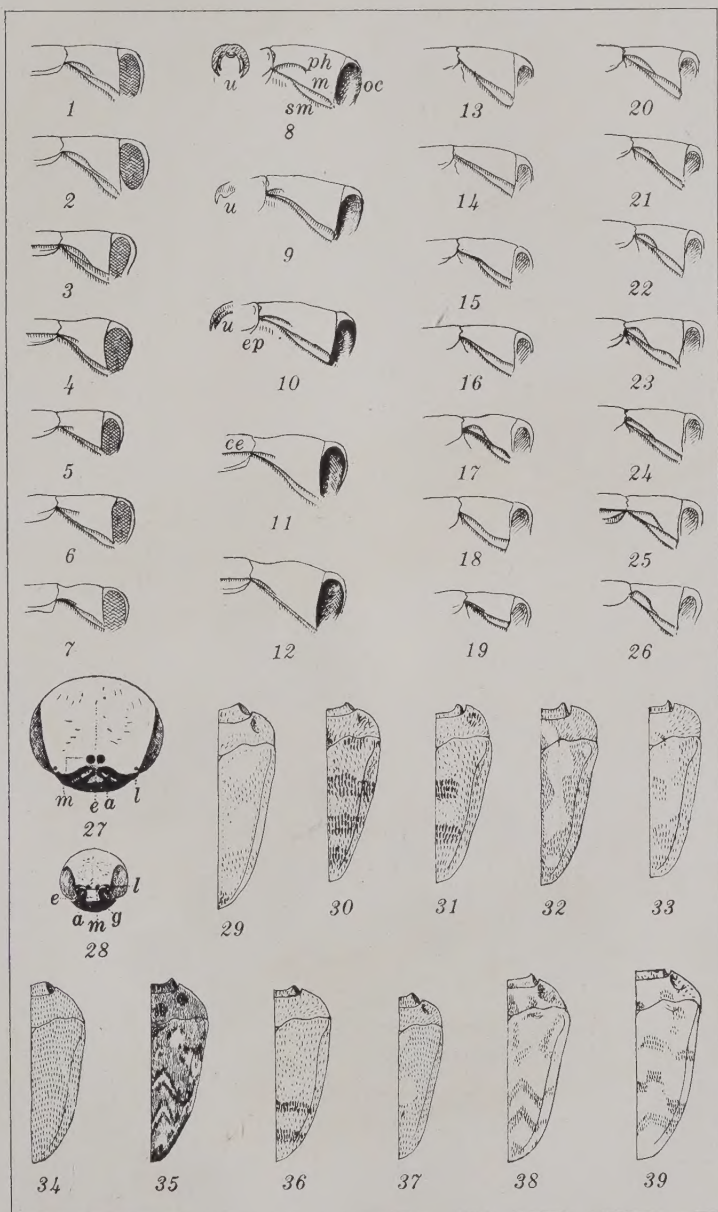


PLATE 4.

